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Manhattan, Kansas



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# The Industrialist.

|                          |                 |
|--------------------------|-----------------|
| PRES. E. R. NICHOLS..... | Editor-in-Chief |
| PROF. J. D. WALTERS..... | Local Editor    |
| PROF. J. T. WILLARD..... | Alumni Editor   |

## TERMS AND VACATIONS.

### FALL TERM, 1907, THIRTEEN WEEKS.

|                                           |                              |
|-------------------------------------------|------------------------------|
| Saturday, November 2.....                 | Mid-term examination         |
| Thursday, November 28.....                | Thanksgiving Day vacation    |
| Thursday and Friday, December 19, 20..... | Examination at close of term |

### WINTER TERM, 1908, TWELVE WEEKS.

|                                        |                                                 |
|----------------------------------------|-------------------------------------------------|
| Monday, January 6.....                 | Examination for admission, at nine A. M.        |
| Tuesday, January 7.....                | Winter term begins                              |
| Tuesday, January 7.....                | Short courses in agriculture and dairying begin |
| Saturday, January 25.....              | Annual intersociety oratorical contest          |
| Saturday, February 15.....             | Mid-term examination                            |
| Thursday, March 19.....                | Annual concert                                  |
| Thursday and Friday, March 26, 27..... | Examination at close of term                    |

### SPRING TERM, 1908, ELEVEN WEEKS.

|                                         |                                                |
|-----------------------------------------|------------------------------------------------|
| Monday, March 30.....                   | Examination for admission, at nine A. M.       |
| Tuesday, March 31.....                  | Spring term begins                             |
| Saturday, May 9.....                    | Mid-term examination                           |
| Tuesday, May 19.....                    | Beginning of summer course in domestic science |
| Tuesday and Wednesday, June 16, 17..... | Examination at close of year                   |
| June 14 to 18.....                      | Exercises of Commencement week                 |
| Thursday, June 18, at ten A. M.....     | Commencement                                   |
| June 19 to September 16.....            | Summer vacation                                |

### FALL TERM, 1908.

|                              |                                          |
|------------------------------|------------------------------------------|
| Wednesday, September 16..... | Examination for admission, at nine A. M. |
| Thursday, September 17.....  | College year begins                      |

## BOARD OF REGENTS.

|                                                        |              |
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|                                                                                         |                                             |
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(Board of Instruction continued on last page.)

# THE INDUSTRIALIST.

VOL. 34.

MANHATTAN, KAN., SEPT. 21, 1907.

No. 1

## ***Dr. Burkett Returns from Russia and Turkey.***

In accordance with the order of the Board of Regents of the Kansas State Agricultural College, in carrying out the provisions of the seed-wheat bill passed by the State legislature last winter, in the interest of seed-wheat investigations, Director Burkett spent the summer in Europe, particularly in Turkey and Russia.

In reference to Turkey, Professor Burkett says that while a good deal of wheat is raised in that country, it is below the standard desired by the wheat growers of Kansas. He visited several points in Turkey in what are claimed to be the best wheat sections, but he was not especially impressed with the character of the wheat.

In Russia, however, the situation is different. There the wheat is good. When made into bread, he knows of none that is better. "I often wondered how those people lived on bread almost alone—as we have been told," said the professor. "Now I know; it is due to the appetizing, nutritious bread the Russian wheat makes. From what I can gather, the two places where the best wheat is found in Russia are Central Crimea and Eastern Karkov. All along the line of Karkov-Sebastopol railroad is good wheat—a stretch of several hundred miles. Much of this wheat is shipped to Sebastopol, Nicolaieff, and Odessa, from which points it goes to Western Europe.

"The largest mills are found at Saratoff, Samara, Nijnvi-Novgorod—centers of much wheat growing. The wheat here, however, is not quite so good as the other mentioned centers."

Is the wheat free from weeds—otherwise clean? "No, that is the chief objection to Russian wheat—it is quite weedy. Scarcely any pains have been taken in keeping the wheat pure. I found, however, that some of the large proprietors are doing much in this line, for they realize the value of a better grade of wheat for seeding purposes."

How is the condition of the country—the parts you visited? "Very unsettled. In fact, the Russian people are very unhappy. The poverty of the peasants is seen on every hand. It is deplor-

able. A small piece of land, one to four acres, seems to be the limit of the peasant farms; and on these little farms taxes and expenses of existence must be met."

The professor made arrangements while in Russia for a number of wheat varieties that seem best adapted to Kansas conditions. These will be tested carefully in Kansas at the various Experiment Stations, and if they prove satisfactory here larger importation will be made.

### ***Changes in the Board of Instruction.***

Among the changes in the teaching force of the College, made during the summer vacation, are the following:

Professor Headlee, Ph. D., of Cornell, has accepted the professorship made vacant by the resignation of Professor Popehoe.

Professor King, of Cornell, was elected head of the new Department of Bacteriology.

C. G. Elling, K. S. A. C. '04, recently under Professor Mayo in Cuba, will be an assistant in the Animal Husbandry Department.

Arthur L. Peck, a classmate of M. F. Ahearn at Amherst, will have work in the Horticultural Department.

Miss Flora Knight, a graduate of the University of Wyoming, is a new assistant in English. Louis H. Beall, of Ellsworth, Kan., will also assist in the English Department.

Kirk H. Logan, K. U. '02, and recently employed by the General Electric Company, will be an assistant in physics.

Miss Nellie Cave, of Manhattan, and Miss McKirahan, of Topeka, are the new additions to the Music Department force.

Miss Margaret Mack, recently of the Leavenworth high school, will assist in the Preparatory Department.

Miss Hancock will assist in the Department of Domestic Art.

E. G. Shafer takes M. D. Snodgrass' place in the Agronomy Department.

Assistants Wheeler, Dean, Freeman and Andrews have been promoted to the rank of assistant professor.

Prof. Oscar Erf, of the Dairy Department, resigned, having accepted the position of professor of dairy husbandry in the Ohio State University.

C. E. Bassler, '07, was made assistant in veterinary science.

The position of principal of the Preparatory Department of the College becoming vacant by the death of Professor McFarland, the Regents appointed Mr. R. J. Barnett, former principal of the Manhattan city schools, to fill the chair.

Harry E. Porter, '07, will be assistant in the Mathematics Department.

O. A. Stevens, '07, was made assistant in botany.

In the Domestic Science Department two new assistants were appointed—Miss Bertha Johnston and Miss Grace H. Woodward.

Miss Florence Warner was made assistant in the Library.

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### ***Professor McFarland Dead.***

Two weeks before the opening of the fall term the Agricultural College lost one of its strongest teachers and most widely known members of the Faculty. Prof. B. S. McFarland died Thursday night, September 3, '07, at the home of his daughter, Mrs. Tarr, near Millersburg, Ky. The funeral took place at Olathe at 2:30 P. M., Sunday following. On his way to Kentucky he became overheated at St. Louis. This resulted in uræmic poisoning. Mrs. McFarland went to Millersburg in response to a telegram and found him alive but unconscious and unable to recognize her.

Mr. McFarland, according to his plans, would have been here in a few days to begin his ninth year as principal of the Preparatory Department of the College. He had planned to drive through from Olathe, where he spent the vacation on his well-improved farm, as had been his custom.

The deceased was about 69 years of age. He came to Olathe from Ohio when a young man and there married Miss Esther Neal. To them were born three children, a son who died in his youth and two daughters, Mrs. Jeannette Tarr, of near Millersburg, Ky., and Mrs. Kate Pickering, of near Lawton, Okla.

Since coming to Kansas Professor McFarland followed the profession of teaching for nearly forty years. He was superintendent of the Olathe city schools for a period of about twenty-five years, with the exception of the position of county superintendent of Johnson county schools, '72-'74, and of the superintendency of the Burlingame schools for a short time.

Professor McFarland was a strong man physically and mentally. He held the degree of A. M. from Miami University. He was a thorough and enthusiastic teacher and a tireless worker. At the time of his death he had probably more years of educational work in Kansas to his credit than any one living to-day. He had a host of friends not only here and in Olathe, but scattered far and wide, who admired him for his warm, straightforward and positive character, and prized the fact that they had come within the circle of his influence.

His remains were buried in the cemetery at Olathe, Kan. The

funeral was attended by hundreds of his friends and former pupils. The Faculty of this College was represented by Prof. and Mrs. J. T. Willard, Prof. and Mrs. B. L. Remick, Prof. Henrietta Calvin, Prof. J. E. Kammeyer, Prof. W. A. McKeever, and Miss Ina Holroyd. Professor Kammeyer was asked to say a few parting words in behalf of the College and responded with a beautiful tribute to the life and work of the deceased collaborator.

The following resolutions were passed by the Faculty in memory of Professor McFarland:

WHEREAS, Death has removed from us our friend and colleague, Prof. Benjamin S. McFarland, and terminated a long career of excellent service in the field of education; and

WHEREAS, He was a man whose moral qualities and intellectual attainments were an example and an inspiration to all who knew him; Therefore be it

*Resolved*, by the Faculty of the Kansas State Agricultural College, in regular session assembled, That we deplore the loss of a strong teacher, a wise counsellor, and a true friend; and that we extend our heartfelt sympathy to his bereaved family. Be it further

*Resolved*, That these resolutions be made a part of our permanent records, and that a copy of the same be offered to the newspapers of Manhattan and Olathe for publication.

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The weekly *Students' Herald* has changed its form from that of a magazine to that of a general newspaper and announces that it will hereafter appear as a semi-weekly. We believe that the *Herald* will be able to make it, though there will be a good deal of solid work required of the editorial force. The *Herald* is undoubtedly the best-written and best-printed student paper in the West, and by doubling its capacity it will become the largest paper also. It deserves the undivided support of the whole student body and the merchants of Manhattan and vicinity. The INDUSTRIALIST wishes its young companion the largest measure of attainable success.

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The building committee of the Board of Regents met at the College on September 5 and awarded contract for the new Veterinary Science Hall to Henry Bennett, of Topeka, for the sum of \$54,488. There were five bids, ranging from this amount up to \$67,000. Mr. Bennett is favorably known to this institution. He has built nearly half of the "City on the Hill," and has done very acceptable work throughout. Work was commenced on September 20.

### Local Notes.

The first football game is scheduled for October 7, with the College of Emporia.

J. M. Murray, senior veterinarian, made a professional trip to Petrolia, Kan., Thursday of last week.

Professor Kinzer attended the Colorado State Fair, at Pueblo, judging cattle. Mrs. Kinzer accompanied him.

The Animal Husbandry Department reports several fine litters of fall pigs of Duroc-Jersey and Poland-China stock.

The Animal Husbandry Department bought two very fine pure-bred Duroc-Jersey male pigs at the John Taylor stock sale.

Asst. Wm. Neil reports that thirteen hundred people inspected the College milking machine at the Republic county fair held at Belleville last week.

Dr. George F. Weida, who taught chemistry here from 1897 to 1903, has been elected to the "Bowles" professorship of chemistry and mineralogy in Kenyon College, Gambier, Ohio.

The total receipts to the firemen from the carnival held recently in the Athletic Park were a little less than \$450. Their expenses are in the neighborhood of \$200, leaving them a profit of about \$250.

Asst. Prof. W. E. Mathewson has resigned to accept a position in the Bureau of Chemistry, United States Department of Agriculture, at an increased salary and with excellent prospects for advancement.

The *Jayhawker* has changed its name. Its form, size and editor will remain, but its heading will read *The Alumnus*. The first number for the present College year was published to-day—a typographical beauty and full of good news.

The Horticultural Department is making an effort to resod the campus in front of Anderson Hall with blue-grass. The ground was plowed up in June and cross-plowed and harrowed once or twice since that time. The seed is now in the ground, awaiting a bountiful rain to start it.

The Y. M. C. A. gave a reception for new students at the Domestic Science Hall Thursday evening. About four hundred students were present, most all of whom were new. Addresses were given by E. S. Taft and Professor McKeever. Watermelons were served to all the guests.

Supt. J. H. Miller, of the Farmers' Institute Department, has moved his office from the old horticultural laboratory into room thirty-two on the main floor of Anderson Hall. The room has been neatly painted and calsomined and will give his department very acceptable quarters, close to the post-office, the printing-office and the offices of the Experiment Station and the President.

Professor McKeever has been requested to deliver an address at the annual meeting of the State Teachers' Association, next December.

Many of our people remember Prof. Leon W. Hartman, acting professor of physics 1901-2. He was married July 31, at Berlin Center, Ohio, to Miss Edith Dabele. After November 1 Professor and Mrs. Hartman will be at home at 209 Douglas Avenue, Salt Lake City.

The contractors have completed the cement sidewalks for which the last legislature had made, what they thought, a liberal appropriation. It is a fine improvement and one that adds greatly to the appearance of the buildings and the campus. It connects all the buildings forming the "semi-circle," but does not reach beyond it to the shops and laboratories, nor does it connect across the campus with the city sidewalks. It will require another appropriation of from \$6000 to \$12,000 to complete the necessary walks.

The College Y. W. C. A. has moved into its new building, on Bluemont Avenue, between Eighth and Ninth. The building is a large, roomy two-story frame building of simple but pleasing architecture. It contains about a dozen large rooms and is well plumbed, lighted, and heated. Beside being the headquarters and meeting place of the association, it houses about two dozen young women members. The removal of the association to its new quarters made necessary the purchasing of a lot of needed furniture, for which the members are soliciting assistance.

The literary societies of the College have made arrangements for another lecture course. The dates are not in all cases positively set, but the attractions are first class. A number of them are well and favorably known to the older students. The following are the numbers as scheduled: Bostonia Sextette, October 15; Alton Pakard (Cartoonist), November 8; Henry Watterson, November 19; Father Vaughn, November 25; Judge Brown, December 6; Chicago Glee Club, December 20; Mrs. Beecher, January 25; Guy Carleton Lee, January 27; Dunbar Quartette, March 5; Elias Day (Impersonator), March 30; Doctor Fox, April 13.

It is too early as yet to predict what the College athletic teams will do this year. Last year, as will be remembered, they came out the champions of the State, beating the State University teams at football, basket-ball and baseball and vanquishing the teams of the smaller institutions all over the State, and even beyond the State. The nucleus of the team this fall term looks well and Coach Ahearn, who led the boys to victory for several seasons, is still at the helm. The following is a partial schedule for the fall term. At home—College of Emporia, October 7; Haskell Indians, October 12; Friends University, October 19; Ottawa University, November 4; Washburn College, November 9; Fairmount College, November 18; Kansas State Normal, November 28. Abroad—Kansas University, October 26.

Among the many improvements made in building lines at the College during the summer vacation may be named the installing of a range of additional steel book stacks in the Library. These stacks will furnish shelves for about 15,000 volumes—enough book space for the growth of the Library for several years. Just what we will do after they have become overfilled we can not guess at present. The available space is now completely used up, but "sufficient unto the day is the evil thereof."

The stone work of the new Domestic Science Hall, for which contract was awarded on June 21, is completed to the top of the basement. The beams for the main floor are practically all in place, and an immense amount of building material of all kinds is on the ground for the main and second stories. The completed parts exhibit a massiveness that the older buildings on the ground do not show. The contractors, Stingley Bros., of Manhattan, intend to put the building under roof by the first of February and complete it by the first of August, '08. There are seven masons, eight stone-cutters, four mortar men, six stone men, two carpenters and painters, nine quarry men, four foremen, one superintendent and seven teamsters employed on the job at present. The window and door frames were made by the C. W. Horn planing-mill, at Topeka.

It is too early at this writing (Saturday morning) to give even approximate figures with regard to the fall-term attendance, as long processions of students are coming in with every train. The Secretary states that about 1350 students have paid the tuition fee, but that quite a number have not paid as yet. The assigning of students is done by a committee of professors and assistants consisting of eighteen members. Many students are irregular in their courses, others want special courses, still others demand certain studies and leave when they cannot get the desired courses. This makes a count of names difficult. On October 1 the short course in domestic science will start and will probably bring us an additional 125 students, so that we will have from 1550 to 1800 students here inside of a week or ten days. The attendance will be way above that of last fall.

"Soils, Their Properties, Improvements, Management, and the Problems of Crop Growing and Crop Feeding" is the title of a new text-book prepared by Charles William Burkett, director of the Agricultural Experiment Station of the Kansas State Agricultural College. The book has just been issued by the well-known firm of publishers of agricultural standard works, Orange Judd Company, of New York. It is a well-written, handsome and artistically illustrated volume of 303 pages. The subject-matter is arranged in thirty chapters, treating the origin and composition of the soil, the elements that form plant-food, soil tillage, drainage, cultivation, tools, manures, soil building, soil inoculation, worn-out soils, etc. The book fills a long-felt want, and we predict for it a phenomenal sale, not only in schools of agriculture but among progressive farmers and students of general science.

Short items from the *Students' Herald*.

Mrs. Calvin spent two weeks at the Salina Chautauqua during July, and later went to Illinois where she did similar work.

Professor Brink and family spent the summer in Michigan and Wisconsin.

Professor Swanson has recently moved into his new house on Bluemont Avenue.

Among the Chautauqua Lecturers in various parts of the State were Professors Walters, Willard, Miller, and Dickens, and Mrs. Calvin and Miss Dow.

Professor and Mrs. TenEyck left, July 25, for an extended tour through the West, also going up into Canada, where the professor investigated the seed wheat of Alberta.

Professor McKeever spent July in a trip to the Pacific coast, also stopping at several intermediate points.

Professor Walters lectured to a farmers' institute in Topeka a few weeks ago on the subject "The Progressive Farmer."

The Cueer Quartet has given concerts during the summer at Westmoreland, Randolph, Eureka Lake, and other places, besides singing on several occasions in Manhattan.

The Chautauqua at Manhattan, July 17 to 26, was a success in every way. Sarber's grove, just across the Blue, was an ideal spot to hold it, and it will be held at the same place again next year, but on a much larger scale. Among the star attractions were the Kilties Band and Captain Hobson. On the day the latter spoke three thousand people attended the Chautauqua.

Prof. B. F. Eyer took the civil service examination, July 23, in Chicago, for the position of electrical expert for "Uncle Sam." Possibly the professor will be in K. S. A. C. another year; but why is it that such professors are not held here by an increase of compensation such that the tempting offers of the government will not draw them away?

Asst. R. A. Seaton spent three weeks of his month's vacation taking the practical side of valve gears from the Santa Fe shops at Topeka. The last week of his vacation was spent at his home in Esbon, Kan.

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### ***Alumni and Former Students.***

The *Jayhawker* is dead! Long live the *Alumnus*!

Born, to Mr. and Mrs. Chas. C. Smith, of Pomona, Cal., a girl.

Ada Rice, '95, spent the summer on her farm near Winona, Logan county, Kan.

R. E. Eastman, '00, spent his vacation at the summer Yale Forestry School at Milford, Pa.

Philip Fox, '97, associate in astrophysics, University of Chicago, has been promoted to an instructorship.

M. V. Hester, '94, has gone to Santa Cruz, La Laguna, P. I., as a teacher. He began performing his new duties June 1.

L. C. Criner, '92, McPherson, Kan., still continues to edit "*The Opinion*," but at present holds the honorable position of mayor.

The unusual mathematical ability of H. E. Porter, '07, has been recognized by his election to an assistantship in mathematics here.

M. R. Shuler, '06, has been elected to the position of teacher of sciences at the Atchison County High School at Effingham, Kan.—*Nationalist*.

H. B. Hubbard, '07, has accepted the position of chief electrician of the Fort Worth and Denver City Railway, and has gone to Fort Worth, Texas.

L. A. Doane, '04, will have the sympathy of friends in the loss of his wife, Ida (Birch) Doane, who died of consumption at Roswell, N. M., July 18.

E. E. Greenough, '06, has taken a position with J. M. Kelsey, Rocky Ford, Colo., owner of the South Side Dairy Farm. He left August 30 for his new work.

Jesse B. Norton, '97, has resigned his position in the Department of Agriculture to take an important one in the botanical department of Cornell University, Ithaca, N. Y.

C. N. Allison, '01, and Leonora (Eggen) Allison visited the College August 21. Mr. Allison is now located at Falls City, Nebr., where he is building up a good dental business.

H. G. Maxwell, '06, has resigned his position as dairyman in the Tuskegee Institute and is attending the veterinary college of the Ohio State University. His address is 926 Dennison Avenue, Columbus, O.

Mr. David Wood, student in 1864-'65 from Council Grove, now a resident of Ouray, Colo., writes to "the dear old College" for information concerning dairying, wishing to use all modern methods and machinery.

Fred Walters, who has been visiting with his parents, Prof. and Mrs. J. D. Walters, has a position with the Canton Bridge Company, and left to-day for Iola, where he will make his headquarters.—*Enterprise*.

F. E. Rader, '95, who is in charge of the experiment station at Rampart, Alaska, expects to spend the time from September 1 to June next in the States. His address now is 2640 Castro street, Los Angeles, Cal.

Prof. R. H. Brown, '98, responded to the congratulations of the student body assembled in chapel the first day of the new term on the birth of a daughter, August 17. Mrs. Brown will be remembered as Cora Ewalt, '98.

Gertrude (Coburn) Jessup, '91, is now living in Columbus, O., where her husband holds an important business position. Her address is 513 W. Sixth Avenue.

Tom Lawrence Pittman, '04, and K. Elizabeth Sweet, '04, were married August 28, 1907, and will be at home after September 25 in Lewistown, Mont., where Mr. Pittman has a position as electrician with the Citizens Light and Power Company.

Chas. H. Popenoe, '05, after spending a year on the home farm, has gone into the United States Department of Agriculture as assistant to F. H. Chittenden. His principal work at present is with the insects affecting truck crops and vegetables.

Effie (Woods) Shartel, '85, accompanied her son Kent from their home in Oklahoma, Okla., and started him in College. Though she has visited the College a few times since her graduation, she finds enormous changes since the last time.

Edith Goodwin, '03, after several years successful work as teacher of science in the Dickinson County High School, has resigned in order to take a year of graduate study at the University of Kansas, where her major work will be in chemistry.

Dr. Grace (Wonsetler) Rude, '85, Hoisington, Kan., visited the College for the first time since her graduation at the opening of College. She came to get her stepson started, and could scarcely find a familiar landmark on the College grounds or in town.

E. C. Farrar, of Beattie, Kan., a former member of the '07 class, and Miss Spiller, of Marysville, Kan., were recently married at the latter-named place. They will be at home at Marysville, where Mr. Farrar is principal of the city schools.—*Nationalist*.

Robert A. Fulton, '05, and Fanny E. Reynolds, '05, were married Thursday, September 12, at the residence of the bride's mother in Manhattan. They will be at home after October 10 at 1779 East Twenty-fifth street, Cleveland, O. Mr. Fulton is an electrical engineer.

H. C. Kyle, '03, has resigned his position in the Ohio Experiment Station as assistant in agronomy to accept one in the Department of Agriculture, and with Mrs. Kyle, *nee* Corinne Failyer, '03, will reside in Washginton, D. C. G. H. Failyer, '77, and Lois Failyer, '07, are with them.

A. D. Stoddard, '06, spent a few days about College this summer. He is employed by the Metropolitan Street Railway Company, Kansas City, Mo., where his work as electrician is the operation of switchboards and sub-stations. He is well pleased with his work and prospects.

L. W. Fielding, K. S. A. C. '05, who has been located in Chicago the past few months, now has an excellent position as manager of the automatic system for the Consolidated Telephone Company in Hazleton, Pa. This is a responsible position and carries with it a large salary.—*Enterprise*.

L. A. Fitz, '02, 306 Board of Trade, Duluth, Minn., has been transferred from Baltimore to Duluth, where he is continuing his work in grain standardization.

A. H. Leidigh, '02, has resigned his position as superintendent of the Amarillo Experimental Farm, which he has been filling as a scientific assistant of the United States Department of Agriculture, and will soon enter upon the management of the large home farm near Hutchinson, Kan.

Helen B. Thompson, '03, after four years of efficient service in the Preparatory Department, during which time she completed work leading to the master's degree, has taken a position as head of the domestic department in Lincoln College, Lincoln, Ill. This is the place formerly held by Myrtle (Mather) Romine, '02.

R. J. Barnett, '95, has been elected principal of the Preparatory Department, to succeed the late Professor McFarland. He has had a large teaching experience in which he has been uniformly successful, and it may be safely predicted that in his present responsible position he will not disappoint his friends or employers.

The many friends of W. R. Correll, '99, and Alta (Worley) Correll, former student, were greatly shocked to learn of her death from appendicitis. Friday, September 13, at their home near Overbrook, Kan. The remains were brought to Manhattan for burial. She leaves three small children without a mother's care.

W. A. Anderson, '91, recently made a short visit at the College. He holds a lucrative and important position as general manager of the Pacific Coast business of the Long-Bell Lumber Co., Kansas City, Mo. He appreciates more and more the real value of a College education, even to one who does not employ it in the technicalities of his business.

H. McCaslin, '01, is practicing law in Atwood, Kan. Apparently he is prospering, as we have received an announcement of his marriage on September 11 to Miss Edith Clemmons, of Osborne, Kan. Mr. McCaslin is also taking a professional interest in loco weed in respect to its effect on the value of western lands, and is enlisting the assistance of College authorities in connection therewith.

Dr. K. C. Davis, '91, who has for some years been principal of the Dunn County (Wis.) School of Agriculture, has begun his new work as dean of the school of agriculture at St. Lawrence University, Canton, N. Y. He will give an address on agricultural high-school work at a conference on rural progress to be held at the Agricultural College, Amherst, Mass., October 2 to 5.

Dr. Bessie Belle Little, '91, after spending a year as interne at the New England Hospital in Boston, has located for the practice of medicine in Manhattan. Her office and rooms will be equipped with the best appliances that can be obtained, and the ladies of Manhattan may be congratulated upon their good fortune in having so earnest and talented a woman physician in the city.

J. R. Garver, '07, is spending the week in Manhattan. He leaves soon for Wisconsin, where he will attend the State University the coming year.—*Nationalist*.

E. N. Rodell, '03, and Nellie Hughes, '06, were married August 31, at the residence of the bride's mother, Topeka, Kan. Mr. Rodell is a very popular young man and assistant in the Printing Department. Mrs. Rodell has many friends here who will be glad that her home is to be near them.

Donald Ross, '07, is reported by the *South Kansas Tribune* to have accepted a position with the chief engineer of the Swift Packing Company, at St. Joseph, Mo. He spent a portion of the summer floating down the White river for two hundred miles through its serpentine windings among the mountains of Arkansas, stopping at night and fishing and hunting as fancy dictated.

Mr. and Mrs. John Martin, of Ogden, announce the marriage of their daughter, Cora Marguerite, to Mr. Earle Shattuck, Wednesday, September 17, 1907, at Junction City, Kan. The groom is a graduate of K. S. A. C., '07, and the bride is a graduate of D. S., '07. They will make their future home in Ruston, La., where the groom has a position as instructor in mechanical engineering for the coming year.—*Nationalist*.

Prof. Henrietta W. Calvin, '86, spent over three weeks in giving lectures and demonstrations in domestic science this summer. Ten days were in connection with the Salina Chautauqua, one week was in Union county, Illinois, under the auspices of the Domestic Science Club, and another week at the Monmouth county, Illinois, Chautauqua. She has received a very flattering offer for similar work in Illinois next year.

Changes of address: Effie (Gilstrap) Frazier, '92, 1510 Terry Avenue, Seattle, Wash.; F. E. Johnson, '99, Sheridan, Wyo.; Lucy Ellis, '95, 705 Lane street, Topeka, Kan.; E. G. Gibson, '96, 2234 Kansas Avenue, Topeka, Kan.; H. V. Harlan, Bayombong, Nueva Viscaya, Luzon, P. I.; Smith Faris, '06, 482 S. Pierce street, Milwaukee, Wis.; Clara Pancake, '03, Mount Airy, Ga.; O. G. Palmer, 2nd lieutenant, 7th cavalry, Fort Riley, Kan.

William Anderson, '98, instructor in physics and mathematics in the College of Mines, Houghton, Mich., is spending his vacation here and at his old home. He has placed the Chemical Department under obligation by contributing a number of fine specimens of native copper to the collection of minerals. Such evidence of thoughtfulness for the interests of Alma Mater are always pleasant to the heads of departments having museums.

J. S. Houser, '04, has been elected entomologist in the experiment station at Santiago de las Vegas, Cuba, and has entered upon his duties there. Mrs. Houser (Bessie Mudge, '03) spent several weeks with relatives at Manhattan, where Mr. Houser joined her just before their departure for Cuba. The position made vacant in the experiment station at Wooster, O., by Mr. Houser's resignation has been filled by the election of W. H. Goodwin, '05.

D. W. Working, '88, has been elected superintendent of agricultural extension at the West Virginia University. He stopped off here July 16 to visit a day or two and to consult with Superintendent Miller while on his way to take up the work of his new position. He will do two months' institute work under the auspices of the State Board of Agriculture each year. Mr. Working's training, experience and natural qualifications are such as to insure him success.

W. T. Swingle, '90, in connection with Lyman J. Briggs, both of the Bureau of Plant Industry, has an interesting and important communication in *Science* for August 9 on "Improvements in the Ultra-Violet Microscope." From this it seems that invisible ultra-violet light possesses marked advantages over ordinary light for the production of microphotographs. Naturally, there is some difficulty in focusing an instrument which uses invisible rays, and some of the improvements mentioned in the article are upon the methods of focusing.

Dr. H. D. Orr, '99, 103 Randolph street, Chicago, Ill., was last spring appointed assistant surgeon to the Illinois National Guard and assigned to the 1st cavalry, its headquarters being Chicago. We also note by the *Interocean* of September 2 that out of 547 physicians he was one of the 47 who passed an examination for medical inspectors of the Chicago public schools, and were found capable of treating children's diseases according to the judgment of the board of examiners. The city will be divided into nine districts and every school will be visited daily.

The friends of Joseph W. Painter, a member of the '07 class at K. S. A. C., will be saddened to learn of his death, which occurred August 30 at a hospital in Denver, Colo., where he was taken a few days before for an operation for appendicitis. Funeral services were held last Monday at the Painter home in Beverly. Mr. Painter finished his work at the College last March, and since that time has been traveling for the Crete, Nebr., Nursery Company. He was in Colorado at the time he became ill and was taken immediately to the Denver hospital, where it was found necessary to perform an operation, after which he lingered only a few days.—*Nationalist*.

The pleasant face of Mary Davis, '04, is absent from the Secretary's office now, but what is our loss is M. F. Ahearn's gain. They were married August 14, at the home of the bride's parents. The bride's uncle, Prof. H. W. Jones, '88, of Topeka, sang a solo, accompanied by R. H. Brown, '98. The Queer Quartet, composed of Laura Lyman, '06, Florence Sweet, '07, Grace Smith, and Augusta Amos, sang Schubert's Bridal Chorus, and during the ceremony, which was performed by Rev. D. H. Fisher, of the Presbyterian church, Professor Brown rendered a violin solo. A large number of invited guests were present and the occasion was one of unusual pleasure. Mr. and Mrs. Ahearn spent a month visiting in the East and will soon be at home on Laramie street, where their many friends will be glad to call.

### Board of Instruction (concluded).

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# The Industrialist.

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 PROF. J. D. WALTERS.....Local Editor  
 PROF. J. T. WILLARD.....Alumni Editor

## TERMS AND VACATIONS.

### FALL TERM, 1907, THIRTEEN WEEKS.

Saturday, November 2.....Mid-term examination  
 Thursday, November 28.....Thanksgiving Day vacation  
 Thursday and Friday, December 19, 20.....Examination at close of term

### WINTER TERM, 1908, TWELVE WEEKS.

Monday, January 6.....Examination for admission, at nine A. M.  
 Tuesday, January 7.....Winter term begins  
 Tuesday, January 7.....Short courses in agriculture and dairying begin  
 Saturday, January 25.....Annual intersociety oratorical contest  
 Saturday, February 15.....Mid-term examination  
 Thursday, March 19.....Annual concert  
 Thursday and Friday, March 26, 27.....Examination at close of term

### SPRING TERM, 1908, ELEVEN WEEKS.

Monday, March 30.....Examination for admission, at nine A. M.  
 Tuesday, March 31.....Spring term begins  
 Saturday, May 9.....Mid-term examination  
 Tuesday, May 19.....Beginning of summer course in domestic science  
 Tuesday and Wednesday, June 16, 17.....Examination at close of year  
 June 14 to 18.....Exercises of Commencement week  
 Thursday, June 18, at ten A. M.....Commencement  
 June 19 to September 16.....Summer vacation

### FALL TERM, 1908,

Wednesday, September 16.....Examination for admission, at nine A. M.  
 Thursday, September 17.....College year begins

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(Board of Instruction continued on last page.)

# THE INDUSTRIALIST.

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No. 2

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## *Going To College.*

Just now considerable numbers of young people are bidding good-by to home folks on the farm and departing for some institution of higher learning. There is anxiety on the part of father and mother—especially mother. This anxiety takes the place of the strenuous efforts and in most cases the self-denials which have attended the outfitting and the changes of duties, the increase of labor in many cases, that have made it possible to realize the fond hope long cherished of giving the children opportunities to enjoy the advantages of the college or university. The feeling which in spite of the exultation contains an element of sadness is experienced in different phases by those who go and those who remain at home. While *The Kansas Farmer* sees the tear that silently creeps down the mother's cheek and appreciates its meaning, the editor desires at this time to address a few words to the departing ones. These realize more or less distinctly that a new era is dawning in their lives, an era of much promise, an era that should open the door to achievement, an era that will inevitably witness changes which can not be undone.

Will the young man who is just now entering upon his new life listen for a few moments to an older brother who has not only been through the experiences, but has also observed hundreds of others as they passed through them? Young man you are strong in body. This physical strength of the country boy is an essential element in the hope of the Nation for a worthy future. Take care of your health and strength. Of the many things that ought to be said on this score we can here say only a few.

Remember that in leaving the farm you are exchanging a life of muscular activity for a more or less sedentary existence. Do not imagine that it will be safe to take your country appetite into the new conditions. Perhaps you never had any trouble with your digestive apparatus except during the days of green apples and unripe watermelons. Take counsel of an older brother and reduce the amount that you eat to a degree that would make your mother feel sure that you were sick and your father say that you

were "off your feed." Obtain good, wholesome food, well-cooked, eat at regular meal times, and at no others. Eat slowly. Chew your food most thoroughly. That gnawing hungry feeling can not be safely cured by bolting down a lot of half-masticated food. Drink plenty of water, but use it sparingly with your meals. A good drink of water half an hour before each meal, on going to bed and on getting up will go far towards regulating your system and keeping you out of the doctor's hands.

Be sure to take plenty of physical exercise. The writer has seen stout, hearty boys from the farm break down in a few months for lack of exercise. The hard work you have done on the farm will not answer for long. Your muscles need exercising every day. At this time a good deal of attention is given to college athletics, and some appear to assume that a rough and tumble football game, in which twenty-two of the strongest and most athletic of the young men practise with a view to developing an eleven that can out-rush the other college, furnishes all the physical development needed by several hundred young men and young women. We are not here considering the merits and demerits of football, but we want to impress upon every student in college or university the importance of personal, daily, physical exercise and plenty of it. This exercise need not be so vigorous as to test the strength and endurance of a Samson. It may consist partly of work that will yield compensation. But your continued success as a college student depends in no small degree upon the regularity of your physical exercise.

Perhaps we should have spoken of sleeping next to eating, but exercise comes not improperly between. Sleep much and sleep regularly. Not a few nervous wrecks result from irregularity and insufficiency of sleep. Take eight hours of good sound sleep every night.

The great purpose for which you have gone to college is to learn; to learn not only what is in books, what may be learned from high-priced instructors, and from the many sources of knowledge, but to learn to use your powers to the best possible advantage. Some educators suggest that to learn to think is the most important purpose of attending school. This is too narrow a view. True, the ability to concentrate one's mental powers upon the subject in hand is an acquirement necessary to greatest success. This ability of concentration of mental effort can scarcely be over-cultivated, and when acquired must be used judiciously. The habit of concentrated effort unaccompanied by the power and the habit of leaving off at will is apt to result in such destruction

of health as renders comparatively useless the power of concentration. The young man from the farm may find difficulty in using his entire mental energy on one subject. As he gradually acquires the power so essential to effective mental work he needs to guard against its use to excess. In some cases the habit of concentration becomes so strong that the will is unable to interrupt it, and the student goes right on with intense mental labor when he ought to be at recreation or sleep. The ability to control mental activities must be acquired and used if one is to make the most of his course at college and of his opportunities in life. School authorities are usually so much engaged in securing the results of concentrated and continued mental effort that they seldom observe the excessive and unremitted concentration when it exists until there comes the breakdown which in many cases sends its victim home to recuperate—perhaps never to return to college.

So important is this matter of conservation of health that the writer is tempted to devote a few columns to its consideration. He has seen young men of magnificent physique and perfect health, of good purposes and good habits, of earnestness and energy, forced to leave school with ruined prospects on account of injudicious use of their powers, and has reflected that a good investment for any school would be the employment of a broad-minded gymnast and physician who should be a psychologist as well, to advise and direct the students from the day of their entrance at college.

Perhaps *The Kansas Farmer* can help a little with a few further suggestions. Acquire as quickly as possible the habits of concentration, method, and diligence. Acquire the habits of cheerfulness. Acquire the habits of recreation at regular times. Acquire the college spirit and be a part of the college life. Avoid excesses of every kind. Avoid the use of tobacco, and especially avoid cigarettes. Avoid the use of intoxicating liquors of every kind, no matter what the temptation. Attend some church and keep the Sabbath. One of the most effective methods of forming the habit of laying aside engrossing matters at will is to turn the attention on Sunday entirely away from studies and the affairs of every-day life. Write to the home folks regularly, frequently, and fully. The tie that binds you to the home is the strongest possible cable to pull you up to higher levels and to bring within your reach worthy achievements.—*Kansas Farmer*.

***Summer Work of the Farmers' Institute and Extension Department.***

The Regents of the Kansas State Agricultural College authorized at the June meeting an extension campaign by this department for the teaching of agriculture in rural schools. Letters were sent to all county superintendents of schools and to all county high-school principals urging the introduction of this study into their schools. Most of the principals had been seen during the spring, and agriculture will be taught in most of the county high schools this coming year. Many of the high schools have employed teachers with special preparation for this work. Mr. M. R. Shuler, '06, was engaged by the Atchison county high school on the recommendation of the department. Several other positions could have been filled had it been possible to secure the teachers.

During the summer I visited twenty-seven teachers' institutes and talked to the teachers on the subject of "Elementary Agriculture in the Schools," finding great interest, not only among the rural teachers, but also with the instructors and patrons. A half-dozen farmers' picnics were included in my visits, and I talked to the people there on the same subject.

Several Chautauquas were addressed by College speakers: Topeka by Professors Willard and Walters, Council Grove by Professor Walters and Miss Dow, Oberlin and Wathena by the superintendent. Professor Kammeyer spoke to farmers' picnics at Barnes and Haddam, and Professor Walters at Randolph.

The office was the busy place, however, with extension correspondence with the corn contest boys, farming club boys, demonstration workers, farmers' institute officers, and prospective students. Altogether over seven thousand letters were sent out from May to September. This work required three stenographers, and for a part of the time four were employed, and for two weeks three other young ladies were employed to address envelopes and fold report blanks, etc. All this has resulted in getting several thousand boys and young men to work out crop, feeding, dairy or poultry demonstrations, and to reading some of the valuable pamphlets prepared by our Experiment Station men.

Three lines of work are now to be carried by this department as directed by the Regents. (1) Securing the teaching of agriculture in public schools; (2) forming boys' farming clubs for demonstration work and reading; and (3) conducting farmers' institutes. For the first work, six pamphlets will be published this year, written by Kansas Agricultural College people, and mailed

to all rural and grammar-grade teachers in Kansas, free, one each month beginning with October: (a) Soils, with Relation to Fertility and Moisture, Willard, (b) How Plants Feed and Grow, Willard, (c) Hygienic Cookery, Mrs. Calvin, (d) Tree Culture, Dickens, (e) Birds and Insects, Dean and Scheffer, (f) Live Stock on the Farm, Burkett. The superintendent will also visit county teachers' associations during the year and present this subject; others connected with the College will assist in the work at the expense of this department.

Boys will be asked to join the Boys' Farming Club, and will be directed to practical reading and to working out demonstrations suggested by heads of various departments of the Experiment Station. They will be asked to attend at least one session of their county institute, and in many cases will have a special address by an institute speaker. Advice will be given relative to the various demonstrations.

The farmers' institute work this year will be a sort of live-stock campaign—horses, cattle, hogs, poultry, dairying, etc.—with other lectures on soil fertility, alfalfa, household topics, tree culture, and "dry-land farming." The regular campaign will start at Norton, October 14. Another circuit will start at Olathe, October 21, and over one hundred twenty institutes will be held by December 20.

The State Farmers' Institute will convene at the Kansas State Agricultural College, Manhattan, December 26 and continue nine days, and will include the following courses: Corn and corn judging, stock and stock judging, dairy and dairy testing, poultry and poultry judging, and domestic science and art.

J. H. MILLER,

*Supt. Farmers' Institute and College Extension.*

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### ***College Stock for Sale.***

We begin this week advertising a line of pure-bred young stock for the Animal Husbandry Department of the Kansas State Agricultural College, and call the attention of readers to the same.

The College has on hands in pure-bred cattle, Shorthorns, Herefords, and Aberdeen Angus; in pure-bred sheep, Rambouillets, Shropshires, Dorsets, and Southdowns; in pure-bred hogs, Poland-Chinas, Berkshires, Duroc-Jerseys, O. I. C.'s, Tamworth's, and Yorkshires. The assortment is quite large, but only the tops of the young stuff will be sent out on mail order. The pigs are all of spring farrow—mostly late; the bulls and rams were likewise dropped last spring, excepting one Hereford calved a year ago.

The College has a printed list of all this stock, giving breeding, and this, with descriptions, will be sent out on request. Necessarily there is a lot of choice blood here and several good individuals, especially among the pigs. The best way to buy is to go and see. A trip to the College is in many ways worth more than it will cost, to say nothing at all of seeing the stock for sale. One should not go there with the expectation of seeing a lot of highly fitted stuff. The pigs, calves and lambs are just in the condition that any good farmer maintains with his stock—the condition for growth and future usefulness. In fact, many men who have only one line of stock to look after are able to give more attention than can be given at the College, where nearly a score of different lines of stock must be kept on hands for the purpose of illustration.

In addition to the males already mentioned the College has decided to sell some good cows—Shorthorns, Angus, and Herefords.—*Breeders' Special.*

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### ***The New Veterinary Science Hall.***

The new Veterinary Science Hall of the Kansas State Agricultural College is now in process of construction. The contract for its erection was let on September 5 to the well-known contractor, Henry Bennett, of Topeka, for the sum of \$54,488 and the work of excavating was commenced on September 21. The electric lighting, heating and plumbing will be done by the College—that is, by the Heat and Power Department, and is not included in Mr. Bennett's contract. It is intended to complete the building by September 1, 1908, so that it can be used next fall term. The total appropriation by the State for its erection is \$70,000.

The building will be located directly south of the present Armory and will face south. It will be two stories high and measure 73 feet 6 inches by 154 feet 9 inches, with an auditorium annex on the north side, measuring 60 feet by 38 feet. The annex will contain a large demonstration and lecture room with raised seats and glass roof. The main part of the building will contain eight large, well-lighted class rooms and laboratories, eight offices, and several storerooms, water-closets and cloak-rooms. The floors of the basement story will be cemented, and all ceilings will be heavily timbered and finished in yellow pine. The halls and stairways will be roomy and finished in oak.

The exterior of the building will exhibit the general character of the other College buildings and will harmonize with the surroundings. All walls visible from the outside will be built of heavy range work of pitched, white limestone, a building stone of

superior merit found on the College farm, not over half a mile from the building site. There will be but little stone carving or other fancy work on the front and cornices, but the general form of the structure and the disposition and architectural treatment of the windows will make it one of the handsomest buildings of the "City on the Hill," and a credit to the Board of Regents and the State Architect.

With this building completed the newly organized course in veterinary science will have a permanent home and a chance to grow. There is no doubt that Kansas will support this course well by sending large numbers of bright young men here to study and by furnishing the needed funds for its further development. The live-stock interests of the State are of such magnitude that in a few years the school of veterinary science will be one of the largest institutions of the kind in the world.

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### ***Kansas Comment.***

Sometimes we hear the expression, "Lots of uneducated men, like Lincoln, are successful men." That is a mistake. Lincoln was an educated man of the highest and most efficient type. An educated man is one who has successfully solved the problem of self-control so well that he can direct all the force to the work at hand. Schools and universities are usually necessary aids in gaining this power of self-control, yet occasionally a man solves this riddle with very little help from the schoolroom. However, in this age of keen intellectual competition they who neglect this splendid opportunity of aid in solving this problem of problems can hardly hope to be the peer of those who make use of the advantage offered. Diploma or degree is only a surface indication of work well done. There are those who, with their eyes mentally riveted forever on their degree or diploma, never fail to wonder why providence fails to push the lever and exalt them as heroes. They can scarcely be called educated—they failed to learn that we exalt ourselves—that what we are comes from within, not from without. Humanity wants service, not badges and degrees. These may represent much more or little, but can never be submitted for service. Diplomas should be represented as emblems of efficiency, but when they are offered as a substitute for service the situation becomes ludicrous if not serious. Service, loving service, is what humanity needs and calls for, and it will scarcely be satisfied with the husk when the grain is to be had.—*Mankato Monitor*.

### Local Notes.

Prof. R. J. Kinzer went to St. Joseph, Mo., September 22 to attend the fair.

Prof. G. A. Dean went to Topeka Monday morning to do some Experiment Station work.

Regent A. M. Story returned Friday from a business trip to the Fort Hays Branch Experiment Station.

President and Mrs. Nichols will receive the Board and Faculty and their wives on Wednesday night, October 2, at East Parkgate.

Wm. Neil went to Kansas City Monday morning where he will spend several days demonstrating the College milking machines.

Notwithstanding the rapid growth of the city and its suburbs, the demand by students for good rooms has never before been so great.

On account of lack of room in the Domestic Science Department the laundry equipment has been stored away and the laundry room will be used for laboratory work.

Mrs. Fred Scidmore and two sons, Earl and Walter, who came here last week to stay during the winter in order that the boys might attend College, were called to their home in Tescott Sunday by a message stating that Mrs. Scidmore's oldest son, Floyd, had been killed by the train.

The following is the proposed football lineup, as given by *Students' Herald*: Walker, left end; Gingery, left tackle; Ostlund, left guard; Hinrich, center; Brown, right guard; Haggman, right tackle; Blake, right end; Graves, quarter; Cave, full-back; Minnis, left half; Christian, right half; Subs.—McLenon, McCallum, Clark, Wilson, Doryland, Lipperd, and Hunter.

Captain Shaffer, who contrary to former orders from Washington is still in charge of the Military Department, has thus far enrolled three hundred eighty cadets in the College battalion. At the corresponding date one year ago he had but two hundred eighty. Examinations will be held October 1 and 2 for promotion in the cadet corps. Captain Shaffer has asked the War Department for two hundred additional rifles.

Director C. W. Burkett's new book on "Soils" is meeting with kind reception all over the country. It is undoubtedly the most complete and popular work of the kind ever published. As a rule, a book of this sort is dry and uninteresting, but in this case it reads like a novel. The story of the properties of the soils, their improvement and management, as well as a discussion of the problems of crop growing and crop feeding, make it equally valuable to the farmer, student, and teacher. There are many illustrations of a practical character, each one suggesting some fundamental principle in soil management. The book has 300 pages and sells in cloth for \$1.25. Orange Judd Company, 439-441 Lafayette street, New York, are the publishers.

Miss Thayer, the Y. W. C. A. secretary of last year, has accepted the position of State secretary, and Miss Florence Richards, assistant secretary last year at the State Normal, has accepted the position at this College.

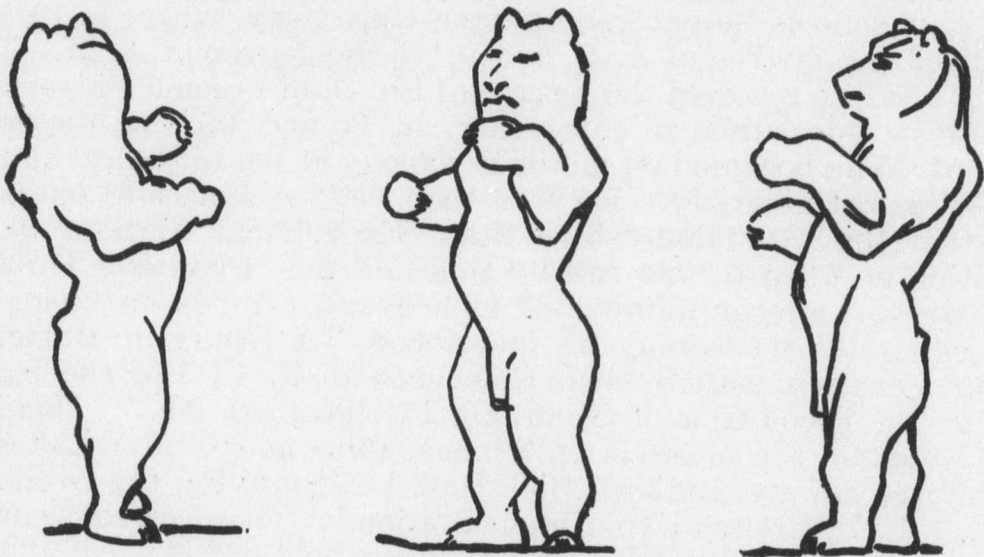
The quantitative laboratories of the Chemical Department have presented a busy scene during the summer vacation, mainly on account of the analytical work on feeding stuffs required by the new feeding-stuffs law. Over six hundred feeds have been analyzed in duplicate to the extent of determining the percentages of protein and of fat. Professor Mathewson has been in charge of the work, assisted by John Calvin, '06, Adah Lewis, '07, R. C. Thompson, H. C. McLean, F. E. Ferris, and Paul Calvin. During the latter part of the summer over sixty sets of apparatus for fat extraction were in constant operation.

The fortieth annual meeting of the Kansas Academy of Science will be held at Emporia, beginning Thursday evening, November 28, and continue through the Friday and Saturday following. Every effort will be made to insure a pleasant and profitable meeting. The details are in charge of the following members, who have consented, at request of the executive board, to act as a local committee: Prof. L. C. Wooster, State Normal School; Prof. D. C. Shaffner, College of Emporia; Prof. C. H. Lyon, City High School, of Emporia; Prof. A. J. Smith, City Engineer of Emporia. It is important that titles of papers should be handed in early, in order to have a place on the regular program, which will be printed a few days before date of meeting. All papers read at the meeting and intended for publication should be typewritten and ready for the printer, and in this way insure an early issue of the annual report. Address titles of papers for the program to J. T. Lovewell, Secretary, Topeka, Kan.

Prof. Thomas J. Headlee, the newly elected head of the Department of Entomology, received his common-school and high-school education at Delphi, Ind. After teaching for six years in graded and high schools he entered Indiana University, where in 1901 he received the degree of A. B. and in '03 the degree of A. M. Two years later he received the degree of Ph. D. of Cornell University, where he specialized in entomology in '05 and '06. In the summer of '05 he became instructor in zoölogy at the biological station of Indiana University. He was then elected associate entomologist in the New Hampshire State Experiment Station, which position he filled till his call by this College. Professor Headlee has written a large number of monograph articles on biological subjects. Of these may be mentioned "A Study in Butterfly Wing Venation with Special Reference to R. 4+5 of the Front Wing." "Blood-Gills of *Simulium Pictipes*, Am. Na." "Ecological Notes on the Mussels of Winona, Pike, and Center Lakes of Kosciusco county, Indiana, Biol. Bull." "Spraying the Orchard, Bull. 131, N. H. Agr'l Experiment Station." The professor comes to us well recommended. He has taken hold of his work at this College with the right kind of grip—the kind that succeeds.

The football material was put through light practice several times last week and made a good showing. The return of Captain Montgomery has caused a jubilant feeling, as his ability as left tackle makes all scrimmages seem easier. Coach Ahearn speaks most hopefully of the outlook. With seven of last year's team on the grounds and some fine new material the coach is not worrying about his squad and the kind of work it will put up during the coming season. Those of the old team who are sure of making the eleven this fall are Blake, Walker, Montgomery, Cunningham, Ostlund, Graves, and Christian.

Kansas people who haven't visited the Agricultural College for several years, nor come in touch with it through any of the branches of its work, probably have no conception of what a splendid technical school it is nor of the great and growing value of its training, especially along practical lines. Its graduate students who return to the farm develop into "market toppers" almost immediately. Time after time the great farm school at Manhattan has also supplied such men as Marlatt, Swingle, Fairchild, Carleton and Webster to the Department of Agriculture at Washington, men who have subsequently achieved world-wide reputation. Kansas is already one of the largest grain-producing states in the Union, and we believe is destined soon to lead in pure-bred stock, but its greatest institution is its Agricultural College, which is setting a pace of development hitherto unparalleled. It is a matter of record that in the last six months the dairy interests of Kansas alone have increased 20 per cent. But the College is not only building for the present; it is building for the future. After inculcating the principles of agriculture it rounds its students out with a vast amount of practical training, which includes thorough courses in the shops, thus anticipating the time, if not already here, when a good farmer must also be a machinist. The best and most successful farmers of the future will be those who have the Agricultural College foundation to build on.—*Mail and Breeze*.



"Teddy Bear" sketches from the portfolio of the Architectural Club.

**Alumni and Former Students.**

C. D. Adams, '95, has gone to Olathe, Kan., to teach in the School for the Deaf and Dumb.

A son, Richard Kimball, was born to Prof. and Mrs. Albert Dickens, Wednesday, August 28.

Changes of address: Effie (Gilstrap) Frazier, '92, 1024 North Corona Avenue, Colorado Springs, Colo.; W. O. Staver, '94, Box 115, Laredo, Tex.

Katharine Winter, '01, was married June 24 to Mr. Chas. E. Hawks, student in 1900. Mr. Hawks is a bookkeeper for the Long-Bell Lumber Company, at Coffeyville, Kan.

Arthur Helder, '04 K. S. A. C., has returned home and will take postgraduate work this year. He has been employed as florist and gardener at Swope Park, Kansas City.—*Mercury*.

Jeanetta Zimmerman, '91, and Maud Zimmerman, '02, are teaching in the Mission School at Provo, Utah. Kate Zimmerman, '00, is still teaching in the Union high school at Fruita, Colo.

Invitations are out for the marriage of Miss Carrie Rockefeller, of Russell, Kan., to Mr. A. D. Colliver, of K. S. A. C. '05. Mr. Colliver is assistant at the Fort Hays Branch Experiment Station.—*Mercury*.

Cecile Allentharp, '07, is studying in the James Milligan University, Decatur, Ill. She gets work there which she could not get here, but on the whole thinks the institution is not to be compared with this.

Dexter Holloway, '07, has been elected assistant in horticulture in the New Mexico College of Agriculture and Mechanic Arts, Mesilla Park, N. M., to succeed Laurenz Greene, '06, who has gone to the Iowa State College, at Ames, to do advanced work.

Miss Etta Barnard ['02] leaves to-morrow for Mankato, where she has been employed to teach domestic art in the high school. She has resigned her position as teacher at the Keats school, and Miss Anna Olson, of Mankato, will teach in her place.—*Nationalist*.

Changes of address: A. J. White, '74, 299 Oakley Boulevard, Chicago, Ill.; May (Bowen) Schoonover, '96, Marietta, Ohio; Dalia (Mason) Cotey, '81, 341 W. Avenue 53, Los Angeles, Cal.; A. H. Johnson, '03, Box 644, San Bernardino, Cal.; C. F. Kinman, '04, Santiago de las Vegas, Cuba; Geo. W. Gasser, '05, Rampart, Alaska.

R. W. Clothier, '97, has resigned the professorship of agriculture and horticulture in the University of Florida and accepted a position in the University of Arizona as professor of agriculture and superintendent of farmers' institutes. Professor Clothier's health has suffered materially in the South, and this with the inducement of a larger salary has induced him, though reluctantly, to make the change.

E. H. Webster, '96, Chief of the Division of Dairying, Department of Agriculture, paid a short visit to the College last Thursday. The duties of his position take him over the country and give him an opportunity to call here occasionally, adding much to the pleasure of his old friends.

Prof. H. N. Whitford ['90], of the Forestry Department of United States, who has been visiting his parents for some weeks, will start about the first of the month on his return to his work in the Philippine Islands. He will stop for a visit of a few weeks in Arizona. Professor Whitford is regarded as one of the highest authorities in the government service in his line, and because of this the government is keeping him in the Philippines, where it regards the future of the forestry interest of transcending importance.—*Republic*.

J. W. Adams, '98, and Mrs. Adams, Cheyenne Wells, Colo., who have been visiting in Missouri, stopped off a few days to see the College last week. Mr. Adams found the campus much changed and saw but few familiar faces, as he has not been here since Commencement, 1900. He is prospering raising cattle on the great plains and anticipates that large numbers of "tender-feet" who are filling up the country for ordinary farming will be grievously disappointed. His brother, S. J. Adams, '98, is his next neighbor and in the same business.

Mrs. Eliza (Davis) Stringfield, Los Angeles, class of 1873, is spending the vacation season at Newport Beach. The daughter graduated from the university and is somewhat of an artist, the son is in the high school, and Mr. Stringfield is living in a cottage by the sea. Mrs. Stringfield is president of the K. S. A. C. alumni association of the Pacific, headquarters at Los Angeles. There were more than thirty at the meeting in July. Fifteen alumni have registered and paid dues. Sarah (Kimball) Bills and Carrie Kimball, '76, two whose names were Campbell, Mrs. Blain, '79, Miss Perkins, '00, and her sister, Mrs. Myers, '00, were among the number known to Manhattanites.—*Republic*.

F. A. Marlatt ['87], the jovial manager of the Blue Valley Manufacturing Company, has driven a horse for six months without the use of a bit. By a clever arrangement of the bridle a pull on the reins is as effective in guiding the horse as it would be with the use of a bit. Besides, the animal is saved the discomfort of having the bits in the mouth. Men do not realize the annoyance it is to their horses to drink and eat with the bits in their mouths, as they are often expected to do, to say nothing of the pain that a sudden jerk on the lines causes to sensitive mouths. It would be well if Fred Marlatt's scheme was generally adopted. Mr. Marlatt uses a buggy which don't raise the dust, and when the roads are muddy the tires don't throw mud. He made a set of steel tires, with beveled surfaces like rubber tires. By this means he secured a tire that will never wear out, and the dirt won't stick to it. He has tried them on all kinds of roads, and says they are a great success.—*Nationalist*.

Prof. Albert Dickens left Friday on a trip to Jamestown, Amherst, Mass., and other points in the East. Professor Dickens will attend the meeting of the Society of Horticultural Science and the American Pomological Society at the Jamestown Exposition.—*Mercury*.

Tuesday evening, October 1, Geo. T. Fielding, Jr., and Miss Helen Ross Hornaday will be married at the Bedford Park Presbyterian church, in New York City. The groom to be is a well-known Manhattan boy, a K. S. A. C. '03 electrical engineer, and holds a very responsible position with the General Electric Company of Schenectady, N. Y. The bride is a daughter of Mr. and Mrs. W. T. Hornaday, of 2969 Decatur Avenue, New York City. Mr. Hornaday is the director in charge of the Zoölogical Park in New York, and for many years had charge of taxidermy in the Smithsonian Institution, Washington, D. C.—*Mercury*.

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A large number of our graduates have been chosen to fill positions as teachers of domestic science and domestic art. Most of the information given in the following paragraphs has been furnished by Prof. Henrietta W. Calvin, '86.

Edith Worden, '06, has a position as teacher of domestic science in the high school of Idaho Springs, Colo.

Ethel Berry, '07, did very acceptable work in domestic science in the Cawker Chautauqua, Cawker, Kan.

Ellen Hanson, '07, is now teacher of domestic science in the School for the Deaf and Dumb at Olathe, Kan.

September 1, Laura Lyman, '06, began her work in the teaching of domestic science in the West End Settlement, Kansas City, Kan.

Mary Hamilton, '06, is teaching domestic science in Norfolk, Va., under the auspices of the United Presbyterian Mission Board.

Josephine Edwards, '05, after spending the summer at the seashore near Boston, has entered Simmons College for a course in domestic science.

Jessie Hoover, '05, has been elected professor of domestic science and dean of women in the South Dakota Agricultural College, and has entered upon her duties.

Amy Cole, '07, left September 25 for Minneapolis, Minn., where she will fill a responsible position in the care of children in the Washburn Children's Orphan Home. Mamie Frey, '07, is teacher of domestic science in the same institution.

May Umberger, '07, is teaching domestic science in the Beloit Industrial School for Girls, succeeding Cora McNutt, '06, in that position. Miss McNutt resigned to become city secretary for the Young Women's Christian Association, Topeka, Kan. Flora Hull, '07, is assistant secretary.

### **Board of Instruction (concluded).**

|                                                                  |                                           |
|------------------------------------------------------------------|-------------------------------------------|
| CLARENCE L. BARNES, D. V. M. (Cornell)                           | Asst. Professor of Veterinary Science     |
| JOHN O. HAMILTON, B. S. (Chicago)                                | Assistant Professor of Physics            |
| ANDREY A. POTTER, S. B. (Mass. Inst. Tech.)                      | Asst. Professor of Mechanical Engineering |
| ROBERT H. BROWN, B. M. (Kan. Con. of Music), B. S. (K. S. A. C.) | Asst. Professor of Music                  |
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| GEO. A. DEAN, M. S. (K. S. A. C.)                                | Assistant Professor of Entomology         |
| GEORGE F. FREEMAN, B. S. (Ala. Polytech. Inst.)                  | Assistant Professor of Botany             |
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| WALTER E. MATHKESON, B. S. (K. S. A. C.)                         | Assistant Professor of Chemistry          |
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| Miss Ella Weeks, A. B. (U. of K.)                                | Instructor in Drawing                     |
| Miss Daisy Zeininger, B. A. (Fairmount)                          | Instructor in Mathematics                 |
| Leonard W. Goss, D. V. M. (Ohio State University)                | Instructor in Veterinary Science          |
| Robert E. Eastman, M. S. (Cornell University)                    | Instructor in Horticulture                |
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| Miss Gertrude Barnes                                             | Assistant Librarian                       |
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| Miss Emma J. Short                                               | Assistant in Preparatory Department       |
| Miss Ina Cowles, B. S. (K. S. A. C.)                             | Assistant in Domestic Art                 |
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| Miss Kate Tinkey                                                 | Assistant Librarian                       |
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| M. Francis Ahearn, B. S. (Mass. Agr. College)                    | Foreman of Greenhouses                    |
| Miss Gertrude Stump, B. S. (K. S. A. C.)                         | Assistant in Domestic Art                 |
| M. Sheldon Brandt, Ph. B. (Yale)                                 | Assistant in Architecture and Drawing     |
| Heman A. Wood, B. S. (Olivet)                                    | Assistant in Chemistry                    |
| Chas. Yost                                                       | Assistant in Heat and Power Department    |
| Earle B. Millard                                                 | Foreman of Blacksmithing                  |
| J. T. Parker                                                     | Assistant in Woodwork                     |
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| Miss Marjorie Russell (Mechanics' Institute)                     | Assistant in Domestic Science             |
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| Miss Clara Willis (Framingham Normal)                            | Assistant in Domestic Science             |
| C. O. Swanson, M. Agr. (Minn.)                                   | Assistant Chemist, Experiment Station     |
| Herbert H. King, M. A. (Ewing College)                           | Assistant in Chemistry                    |
| Edw. C. Crowley, Ph. B. (Yale)                                   | Assistant in Chemistry                    |
| Hugh Oliver                                                      | Assistant in Heat and Power Department    |
| Miss Charlaire Furley, B. A. (Fairmount)                         | Assistant in Preparatory Department       |
| Miss Jessie Reynolds, A. B. (K. U.)                              | Assistant in Preparatory Department       |
| David M. Wilson, D. S. (Ont. Agr. College)                       | Assistant in Dairy Husbandry              |
| Leland E. Call, B. S. (Ohio State University)                    | Assistant in Agronomy                     |
| Miss Mary F. Nesbit, A. B. (Illinois University)                 | Assistant in Mathematics                  |
| Miss Annette Leonard, A. B. (K. U.)                              | Assistant in English                      |
| William C. Lane, B. S. (K. S. A. C.)                             | Assistant in Physics                      |
| Louis H. Beall, A. B. (Michigan)                                 | Assistant in English                      |
| Miss Flora C. Knight, A. B. (Uni. of Wyoming)                    | Assistant in English                      |
| Miss Grace H. Woodward (Boston School of D. S.)                  | Assistant in Domestic Science             |
| Miss Nellie Cave                                                 | Assistant in Music                        |
| Miss Anna I. McKirahan                                           | Assistant in Music                        |
| Miss Margaret Mack (K. S. N.)                                    | Assistant in Preparatory Department       |
| Edwin G. Schafer, B. S. (K. S. A. C.)                            | Assistant in Agronomy                     |
| Orin A. Stevens, B. S. (K. S. A. C.)                             | Assistant in Botany                       |
| Charles E. Bassler, D. V. M. (K. S. A. C.)                       | Assistant in Veterinary Science           |
| Miss Mary W. Hancock (Mechanic's Inst.)                          | Assistant in Domestic Art                 |
| S. W. McGarrah, A. M. (Grove City College)                       | Assistant in Mathematics                  |
| Carl G. Elling, B. S. (K. S. A. C.)                              | Assistant in Animal Husbandry             |
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| C. A. Arthur Utt                                                 | Assistant in Chemistry                    |
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| Miss Anna Gordon, A. B. (Iowa College)                           | Assistant in Preparatory Department       |
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| William Neill                                                    | Dairy Herdsman                            |
| G. A. Porteous                                                   | Herdsman                                  |
| Wm. A. Lamb                                                      | Poultryman                                |
| Floyd Howard                                                     | Farm Foreman                              |
| William R. Lewis                                                 | Janitor                                   |

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PRES. E. R. NICHOLS.....	Editor-in-Chief
PROF. J. D. WALTERS.....	Local Editor
PROF. J. T. WILLARD.....	Alumni Editor

TERMS AND VACATIONS.

FALL TERM, 1907, THIRTEEN WEEKS.

Saturday, November 2.....	Mid-term examination
Thursday, November 28.....	Thanksgiving Day vacation
Thursday and Friday, December 19, 20.....	Examination at close of term

WINTER TERM, 1908, TWELVE WEEKS.

Monday, January 6.....	Examination for admission, at nine A. M.
Tuesday, January 7.....	Winter term begins
Tuesday, January 7.....	Short courses in agriculture and dairying begin
Saturday, January 25.....	Annual intersociety oratorical contest
Saturday, February 15.....	Mid-term examination
Thursday, March 19.....	Annual concert
Thursday and Friday, March 26, 27.....	Examination at close of term

SPRING TERM, 1908, ELEVEN WEEKS.

Monday, March 30.....	Examination for admission, at nine A. M.
Tuesday, March 31.....	Spring term begins
Saturday, May 9.....	Mid-term examination
Tuesday, May 19.....	Beginning of summer course in domestic science
Tuesday and Wednesday, June 16, 17.....	Examination at close of year
June 14 to 18.....	Exercises of Commencement week
Thursday, June 18, at ten A. M.....	Commencement
June 19 to September 16.....	Summer vacation

FALL TERM, 1908,

Wednesday, September 16.....	Examination for admission, at nine A. M.
Thursday, September 17.....	College year begins

BOARD OF REGENTS.

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HERBERT F. ROBERTS, A. B. (U. of K.), M. S. (K. S. A. C.).....	Professor of Botany
WILLIAM A. MCKEEVER, Ph. M. (Univ. of Chicago).....	Professor of Philosophy
EDMUND B. MCCORMICK, S. B. (Mass. Inst. Tech.).....	Prof. of Mech. Engineering, Supt. of Shops
ALBERT DICKENS, M. S. (K. S. A. C.).....	Professor of Horticulture, Supt. of Grounds
CLARK M. BRINK, A. M. (U. of R.), Ph. D. (Univ. of City of New York).....	Professor of English
ALBERT M. TEN EYCK, B. Agr. (Wisconsin).....	Professor of Agronomy, Supt. of Farm
MRS. HENRIETTA W. CALVIN, B. S. (K. S. A. C.).....	Professor of Domestic Science
RALPH R. PRICE, A. M. (U. of K.).....	Professor of History and Civics
JULIUS E. KAMMEYER, A. M. (Central Wesleyan College).....	Professor of Economics
PEARL M. SHAFFER, Captain Twenty-fifth Infantry, U. S. A.....	Professor of Military Science
JOHN V. CORTELYOU, A. M. (Univ. of Neb.), Ph. D. (Heidelberg).....	Professor of German
OLOF VALLEY, B. M. (Chicago Conservatory).....	Professor of Music
F. S. SCHOENLEBER, D. V. S. (Chicago Vet. College).....	Professor of Veterinary Science
ROLAND J. KINZER, B. S. A. (Iowa State College).....	Professor of Animal Husbandry
WALTER E. KING, M. S. (Cornell).....	Professor of Bacteriology
THOMAS J. HEADLEE, Ph. D. (Cornell).....	Professor of Entomology
JOSHUA D. RICKMAN.....	Professor of Dairy Husbandry
MISS MARGUERITE E. BARBOUR (Sargent Nor. Sch. Phys. Tr.).....	Superintendent of Printing
MISS ANTONETTA BECKER (Drexel).....	Director of Physical Training
MISS ANNE M. BOYD, A. B., Lib. Sci. (Millikin).....	Superintendent of Domestic Art
ROBERT J. BARNETT, B. S. (K. S. A. C.).....	Librarian
	Principal Preparatory Department

JACOB LUND, M. S. (K. S. A. C.).....	Superintendent Heat and Power Department
JOHN H. MILLER, A. M.....	Superintendent Farmers' Institutes
MISS LORENA E. CLEMONS, B. S. (K. S. A. C.).....	Secretary

(Board of Instruction continued on last page.)

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No. 3

To Wipe Out Tuberculosis.

There is proposed herein a plan for the most economic, rapid and satisfactory eradication of tuberculosis from the food animals which the writer has had in mind for a long time, and it is hoped the idea started will be subject to such improvements in the minds of those who read it that their suggestions will result in the general plan being immediately attempted.

The farmers of several states, particularly in Iowa in 1898, cast their bread upon the water, and it has returned, when they attempted to block any legislation suggested by the veterinary profession for its eradication in animals. Ninety per cent of the farmers of this country are hurting their interests when they bring political influence to bear against wise and commendable legislation.

From a personal experiment in a certain district of tagging 3430 hogs brought to market in 626 different wagons, and killing the animals later, I found that only 39 different farmers had brought in tuberculous hogs. This having been in an especially bad district, I believe a conservative estimate, taking the country as a whole, would be that less than 6 per cent of the farmers in the United States are sending all the tuberculous food animals to market, causing 100 per cent of the farmers, 100 per cent of the packers and 100 per cent of the consumers to suffer in varying proportions.

From more view points than one it is to the positive interest of the 94 per cent who do not now have tuberculosis upon their premises to ascertain whether they are one of the 94 per cent, and if so to even go farther and see that it is eradicated entirely from the 6 per cent.

If we are not careful we will some day awaken to the fact that the newly developing countries of South America, starting rightly as an advantage, will soon eradicate tuberculosis from their herds, and then possibly set up a justified European scare against our products not coming from animals known to be free from tuberculosis.

The bulk of cattle condemned by federal meat inspectors are

cows affected with tuberculosis, and some of these up to periods of fifteen years have been supplying milk in a raw state to the consumer, and these cows have been continuing the disease to others, and to hogs and to chickens *ad infinitum*. Now, that is true scandal.

The concentrated carefulness and government jurisdiction of packing-houses make our meat products good, wholesome and perfect, in spite of and in face of the scattered carelessness and indifference, neglect and heedlessness of our farmers. But it will not make the products of over 5,000,000 cows good and sanitary and wholesome. The tuberculous cow is not handicapped one iota in competition with the healthy cow. She and other species are "gold bricks."

It is the American farmer as well as the American packer who should certainly be responsible for and who can make the reputation of American meats and dairy produce.

Ultimately it would be a profitable financial investment for this nation, in proportionate conjunction with the several states as they have been neglectful, to cause every cow in the land to be tested for tuberculosis, and wherever found the remaining animals on the same premises likewise tested, and then send them down to southwestern government land reservations, divided up according to the several states, and there be placed under favorable therapeutic conditions, the animals to be bought either at full value or at a discount from a pooled fund from the federal, state and county governments and the packer.

But better still, I firmly believe if the government and the farmers would do their part faithfully that the packers would be willing to suffer the entire loss from the condemnations of the animals that are now tuberculous. If the 6 per cent of farms which now have all the tuberculous animals upon them could be ascertained, I am sure the packers would be willing to buy outright every one of the food animals on these farms at full market values and without one cent of loss to the farmer.

These are the animals that are giving and transmitting the disease to those that will be marketed in the years to come. The only cost to the farmer will be that of properly disinfecting his premises in an approved manner, and he should be glad to do that. The only cost to the government would be the testing of the remaining animals on farms which are known to have had tuberculous animals upon them.

And really the packer will not lose a single penny, for all the tuberculous animals living now, unless they die or are killed beforehand, will ultimately reach the open market, where he will

buy them unconsciously and with exactly the same loss. Indeed, if bought now the disease may not be advanced to the stage that would cause its condemnation by the inspectors in a few months more time. One thing sure, the disease would be practically eradicated, and they will have prevented the losses of to-morrow.

So evidently the whole problem is one of discovering where the tuberculous animals are at present located, and that is the object of this article and the following crude forms of resolutions which I am sure, and hope, the reader will try to improve.

The tag should be made in the form of a fraction, each county in the state being given a number, and that be the numerator, and each live-stock owner in each county be given a number, which will be the denominator of the fraction. A letter for each state.

All readers will understand the following resolutions have never been made, but are simply a proposed set:

"Whereas, we, the packers, are suffering immense loss and risk of losses from the condemnation of food animals in order to fulfill the requirements of the meat-inspection act of June, 1906, and without criticism of that act;

"Whereas, we often feel we are justified in buying at lower bids from the farmer to partly meet this risk, and to proportionately on the other hand increase the cost of the finished product to partly meet the same risk;

"Whereas, we believe tuberculosis to be on less than 6 per cent of the farms of this country, and that the owners of these farms are marketing all the tuberculosis, and we know that the percentage will be increased by spreading from these farms only, through public sales and otherwise, unless some steps for its prevention are taken;

"Whereas, tuberculosis cannot be recognized at sight on foot without the application of the tuberculin test, which is impracticable in the open live-stock market;

"Whereas, we realize that every tuberculous food animal living to-day will ultimately reach the open market (unless it die or is killed beforehand), and the very great majority of them will be bought by us unconsciously at our loss and at the loss of the consumer;

"Whereas, the problem in the eradication of tuberculosis is simply one of discovering the location of the minority of 6 per cent of the farms which have tubercular animals upon them, and are therefore the only source centers of the disease, the real problem being to merely apply the recognized methods of eradication, not upon 100 per cent, but upon only 6 per cent of the farms;

"Whereas, we, the packers, have even more than the government, except through its meat-inspection laws, extended the meat products market to all parts of the world at considerable expense, with benefit not only to ourselves, but to the farmers and the entire country;

"Whereas, we, the packers, believe we can accomplish what it is the duty of the government to do, but cannot and does not, apparently for no other reason than petty politics and a generally misguided opinion that it will be at individual loss of property;

"Whereas, we believe the plan proposed in these resolutions will be for the benefit of not only 100 per cent of the packers, but also for 100 per cent of the farmers, 100 per cent of the consumers, and 100 per cent of the dairy produce which we do not handle;

"Whereas, we believe this combined effort on our part is in behalf of the common good, we, the packers, do hereby resolve:

"That we agree to bear the expense of having prepared a sufficient number of recognition tags of a type approved by the United States Department of Agriculture, or the Kansas State Experiment Station, providing the farmers of the State of Kansas adhere to their resolutions of date, and apply the tags to all live stock, except range cattle, sent to market prior to December 31, 1909, and to all cows and bulls sent to market prior to December 31, 1912;

"That upon the discovery of tuberculosis by the United States inspectors in any animal slaughtered in our packing-houses, that can be traced by the tag number to the owner, the packer and the owner only shall be notified of that fact by the government.

"That the owner of such animals shall be required to allow all susceptible food animals upon his premises to be tested for tuberculosis by methods recognized by the United States Department of Agriculture or the Kansas Experiment Station, unless he would prefer to sell every animal to the packer without having the test made.

"That we, the packers, agree to pay the full market value for all the animals which react to the tuberculin test, or for all the animals on the premises, provided as per their resolutions of (date), the farmers will immediately separate the healthy from the reacting ones, and not allow them to come in contact with healthy animals except during shipment, and will make all efforts at their expense to disinfect their premises in a manner the United States Department of Agriculture or Kansas Experiment Station deems necessary to prevent spread of the disease from the source to additional animals.

"That we, the packers, will bear the loss from the condemnation of tubercular animals coming from the State of Kansas, in the following proportion based on the losses each packer suffered for the same cause during the previous year. In the form of a fraction let the denominator represent the total losses for the previous year by all the packers, and the numerator equal the loss by each packer for the same period. Reduce to a common fraction that will apportion the losses from condemned animals coming from Kansas during the period of the experiment.

"That the federal and state governments should bear the expense of the testing and necessary record keeping.

"That the state and federal governments should give the necessary legal aid to assist in demonstrating the success or failure of the experiment.

"That we do not choose Kansas with any belief that she has a greater amount of the disease than any other state; in fact we believe she has less than the principal ones.

"That we firmly believe the disease can be practically eradicated within a period of five years if such a course as these resolutions indicate be adopted."

The following are proposed resolutions which it is hoped the farmers will make:

"Whereas, we, the farmers of the State of Kansas, realize that tuberculosis of the food animals is prevalent throughout the civilized world;

"Whereas, we believe on good authority that there is less percentage in the United States than in any other country in the world, thus making it an easier problem to deal with;

"Whereas, we sincerely believe less than 6 per cent of the farmers of the entire country are owning and marketing all the tuberculosis animals, the remaining 94 per cent being absolutely innocent;

"Whereas, we believe the disease to be one which will steadily increase unless there is some intervention, each succeeding year, therefore making the problem more difficult;

"Whereas, we believe the disease cannot be recognized in the live animal except by application of the tuberculin test;

"Whereas, we believe the disease communicable and preventable;

"Whereas, we are solicitous regarding the possibilities of ourselves and family becoming affected with the disease from our cattle in a manner similar to the way our hogs acquire the disease;

"Whereas, we are sincerely desirous that our entire live stock

shall become a meat product of the highest quality without the economic destruction which the meat inspection service now shows to be necessary;

"Whereas, we are desirous of eliminating the risk of immense losses from condemnations which the packers now suffer in buying on the open market, and really reacting against us;

"Whereas, we believe in offering for sale only what we can guarantee and thus give a 'square deal;'

"Whereas, we know a large quantity of feed and labor is expended on animals that never reach the economic purpose and value intended;.

"Whereas, we believe that coöperation instead of confliction and antagonism between the packers and live-stock owners will be found to be the most rapid, economic and certainly most commendable method to adopt for its eradication;

"Whereas, we believe the State of Kansas to have at present as small a percentage of tuberculosis as any of the middle states, and less than the eastern;

"Whereas, we feel the State of Kansas to be as progressive as any state in the Union and can, therefore, be a pioneer in inaugurating a method, the success of which seems at present so promising that an example will be set to the other states;

"Whereas, the packers slaughtering animals coming from the State of Kansas have agreed to pay full market value for all tubercular animals until December 31, 1909, under all the conditions stated in these resolutions and their resolutions of date;

"We, the farmers and live-stock owners of the State of Kansas, do hereby resolve,

"That, providing the aforesaid packers furnish the proper tags, we hereby agree to properly and securely tag in the left ear all food animals which we send to market prior to December 31, 1909;

"That the United States Department of Agriculture should conduct the work of distributing the tags to the farmers which the packers furnish, and keep all records necessary.

"That the United States Post-office Department should authorize the Department of Agriculture to forward these tags to the farmers by mail without cost;

"That we will forward the United States Department of Agriculture as accurate an estimate as is consistent of how many of each species of food animals we will market in the six months;

"That in case the government inspectors find one or more of the animals belonging to an individual to be tuberculous at time of slaughter, that individual agrees to allow every susceptible animal

he owns or which is on his place to be tested for tuberculosis with tuberculin by methods approved of by the government and State experiment station;

"That every animal found to be tuberculous will be immediately separated and not allowed to come in contact with healthy animals, and the reacting animals will be sold immediately to the packers at a price a similar animal in a healthy condition would bring, allowing, however, the feeder to finish the animals if he desires;

"That in case tuberculosis shall be found in a pure bred and high type of animal, it is desired and believed it will be more economical to retain and transmit his other good qualities, this animal can be retained under conditions laid down by the government that are believed will not transmit the disease to additional animals;

"That the owner will not sell the reacting animals except to the packer;

"That immediately after the removal of the tuberculous animals the premises will be disinfected at the owner's expense in a manner which the government and the State experiment station shall deem sufficient to prevent the spread of the disease;

"That, within one year, all the susceptible animals will be allowed to be retested, and all reacting ones treated as above;

"That Congress and the State legislature of Kansas should appropriate sufficient money to pay for the testing and for part of the record expense."

BURTON R. ROGERS.

National Corn Exposition.

The National Corn Exposition will be held at Chicago, October 5 to 19, 1907. The purpose of this exposition is to excite or stimulate competition between the states and different localities, with a view, if possible, to increasing the interest in the growth of corn throughout the sections capable of producing this grain, and at the same time to inculcate among the farmers and their children a higher appreciation of the beauty, strength and glory of the corn.

It will be the purpose of the exposition to bring the corn growers together in competition for prizes, which will be liberal, and at the same time to introduce such educational features as will be of more lasting benefit than can possibly result from competition.

Some of us have conceived the idea that more good can be accomplished by educating the farmer and his children to know and to grow this the most valuable of farm products. It is proposed to offer premiums to students for articles on the following subjects:

1. Improvement of corn from the corn grower's standpoint, or how to increase the yield and quality of the corn crop.
2. Improvement of corn from the corn breeder's standpoint.
3. Corn-judging contests—their value and how to conduct them.
4. How corn grows. This article is to give the botany of corn.
5. Corn products—their uses and importance in the commercial world.
6. Growing corn one hundred years from to-day.

Each of the articles is to contain about 1000 words. The secretary of the exposition is H. N. Higinbotham, 77 Jackson Boulevard, Great Northern Bldg., Chicago, Ill.

This week and next the Agronomy Department is making an exhibition of corn at the National Corn Exposition, at Chicago, in charge of Asst. E. G. Schafer. This exhibit includes some fifteen crates of selected seed-corn, samples of varieties, etc. A feature of this display is a collection of freaks in corn, among which are five ears in one husk, five ears on one stalk, twin ears, the triplet, morphodite ears, morphodite tassels, and peculiar shapes of ears, such as closed hand, an open hand, a crab's claw, shepherd's crook, and other peculiar forms. The display exhibit is in part educational, poor ears for seed being exhibited in comparison with good ears for seed of several of the varieties which the department is breeding. Several entries were made for premiums, and Professor TenEyck hopes to secure premiums sufficient to defray expenses. A feature of the exposition is the students' corn-judging contest on October 10. Professor TenEyck is training a team in corn-judging work and expects to have some good material to compete in this contest. C. A. Shamel, manager of the exposition, writes that seven colleges have made application for entry in this contest. This means sharp competition and an interesting contest.

Local Notes.

Professors R. J. Kinzer and Geo. C. Wheeler went to Kansas City this week to attend the Interstate Fair.

Miss Mary Hamilton, a sister of Prof. J. O. Hamilton, has a position as teacher of domestic science at Norfolk, Va.

Miss Bertha Johnston, a graduate of Simmond's, Boston, is the new assistant in the Domestic Science Department.

The football season for 1907 opens Monday with a game at Athletic Park between the Farmers and the College of Emporia team.

Condition examinations for those who received low grades last term were held Monday. The teachers report that several of the sinners passed the river of Jordan all right.

The first prizes on cantaloupes, celery, and tomatoes, and the second prize on corn at the State Fair at Hutchinson went to graduates of the Kansas State Agricultural College.

The College Band will not go to Kansas City this fall to play in the Priest of Pallas parade, owing to the passage of the two-cent fare law, and not being able to obtain reduced rates.

The Department of Architecture and Drawing has lately added to its equipment a color wheel of greatly improved make. It will be used by Miss Ella Weeks in her classes in color and design.

The bountiful rains of the past week have put the wheat fields and newly sown grass and alfalfa plots of the College farm in good condition, though they have retarded the building operations on the three new buildings now in process of erection.

The Rooters' Club has reorganized for another term and reports that strong voices and capacious lungs will not be wanting. Herb. Stroug was elected president; E. H. Dearborn, vice-president; H. H. Momeyer, secretary; Fred M. Hayes, treasurer; Elmer Bull, yell leader.

The College consumes about 25,000 gallons of water per day. This water is pumped by the College pumping station. The power is transmitted from the power-house to the pumps by electrical transmission. The pumps can be regulated from the power-house. Engineer Lund has this summer sunk a second well, directly north of the first one, to assist in furnishing water. The pump of this well will be installed as soon as it arrives.

Sec. F. D. Coburn, of the Kansas State Board of Agriculture, has requested the privilege of republishing, in his Quarterly Report, bulletins 144 and 147, both issued by the Agronomy Department of this College and Experiment Station, the first on "Small Grains," and the latter on "Indian Corn." This is a compliment to Professor TenEyck and the work of the Agronomy Department and indicates, somewhat, the valuable character of these bulletins to the farmers of Kansas. The *Kansas Farmer* has also published bulletin 144 and is now publishing bulletin 147 in consecutive issues.

The annual reception of the Board of Regents and the Faculty and their wives by President and Mrs. Nichols Wednesday night at their residence at East Parkgate was attended by over a hundred persons. All enjoyed themselves highly notwithstanding the severe rainstorm that raged over the city all evening.

Manager G. A. Dean is trying to perfect a second-team schedule for the fall term. Arrangements have been made to get the State University second team here on November 22 or 23. The State Normal seconds will probably play here some time during the term, and a trip has been planned to Salina or Clay Center.

The Dairy Department is preparing an exhibition for the National Corn Exposition in Chicago next month. It is a graphic illustration, accompanied by photographs, showing the removal of soil fertility by grain growing and the restoring of soil fertility by the dairy herd. It shows a good deal of careful work and is a credit to the department.—*Herald*.

A new Westinghouse fully enclosed motor giving fifteen horsepower will be installed in the shops, also a twelve and a half horsepower Western Electric motor, to run the machine-shops. A fifteen horsepower, slow-speed Western Electric motor will be placed in the Physics building to run the air compressor through a silent chain drive. The motor now in use in the machine-shop will be used to run the board lathe in the carpenter-shop.—*Herald*.

The Agronomy Department had an exhibit of grains, grasses, forage crops, corn, etc., at the Interstate Fair and Exposition at Kansas City, Mo., September 23 to October 3. The exhibit was arranged by and in charge of E. D. Trout, stenographer in the department, during the first week of the fair, when his place was taken by Asst. E. G. Schafer, who acted as judge. The exhibit received much favorable notice at the fair, and in the judgment of Mr. Trout was superior to the other exhibits of this character.

Professor Willard left to-day for Norfolk, Va., to attend the meeting of the Association of Official Agricultural Chemists, an organization which determines the methods of analysis used in most of the states under the provisions of state and federal laws in the examination of foods, feeds, and fertilizers. On his return he will visit State College, Pa., to study the methods used there in investigating the problems of animal nutrition. He will also visit two or three other Experiment Stations, and will be absent two or three weeks.

The Kansas City *Times* of October 4 states that "Capt. Pearl Shaffer, 25 U. S. Infantry, is relieved from duty at the Kansas State Agricultural College, to take effect October 15, and will then proceed to join his regiment, at Parang, Mindanao, P. I." The captain has not, at this writing, received direct orders from the War Department, but expects to leave San Francisco the latter part of the month. His successor at this College is not appointed, as yet. Cadet Captain Elmer Bull will be in command of the battalion until the War Department acts.

C. C. Cunningham, '03, has been employed by the Agronomy Department as special assistant in crop work and grain-breeding experiments.

J. R. Alvano, one of the Filipinos who has been attending College, left this week for Manila, P. I., on account of sickness in his father's family. He intends to return later and finish his course. Another Filipino, at present in California, will take up work at this College in a short time.

The State Agricultural College again showed the milking machine in operation at the State Fair at Hutchinson, and this is a never-ceasing wonder which attracted large crowds daily. Three hand separators were also on exhibition. The exhibit was in charge of Assistant D. M. Wilson.

The Agronomy Department is very busy now between rains trying to seed fall wheat. The weather has been unfavorable for seeding. Professor Ten Eyck plans to sow nearly one hundred acres of winter wheat, largely for seed production, although a number of experiments will be conducted, including breeding trials, variety tests, dates of seeding trials, preparation of seed-bed, and rotation experiments. In connection with the date of seeding trials Doctor Webster, of the U. S. Department of Agriculture, is coöperating in studying the development of the Hessian fly upon the different dates of seeding.

The Board of Regents met in regular session at the College on Tuesday, Wednesday and Thursday of this week. Among the business transacted was the organization of a four-years course in civil engineering and of a six-weeks summer school in agriculture. The latter will be chiefly for teachers and will be similar in scope to the teachers' course in domestic science. Ed. H. Webster, an alumnus of the College, and for several years chief of the Dairy Division of the United States Department of Agriculture, was elected professor of dairying. Janitor William R. Lewis' title was changed to Custodian. One hundred seventy-five rifles and equipments for the College battalion were requested of the United States War Department. A large amount of routine work was transacted.

The new building of the Young Men's Christian Association has been progressing slowly but surely. The quality of work so far done is quite satisfactory, and the building will present a substantial and handsome appearance. The gymnasium annex is nearly completed, while the main part of the building will soon be ready for the roof. Collections have been coming in fairly well, but all back pledges should be paid at once, as money will be needed to meet the large bills which will soon fall due. Probably two or three thousand dollars more will be needed for the building itself. It is quite certain that an additional canvass will have to be made for the furnishings. The estimated cost for this purpose is \$5000. The supervision of the building during construction has been in charge of Professor Walters and Mr. Pfuetze, the latter being employed by the day.

It takes over seven million gallons of city water to supply Manhattan during each of the three summer months, and a total of nearly fifty million gallons to supply the city for the year. As there are no factories that use large quantities, and as the larger one of the two railroad systems pumps its own water, this enormous quantity of city water is used chiefly to supply private houses. Should all the water be used this way it would amount to nearly 1000 gallons per month per inhabitant. If Herbert Spencer is correct when he says that the quantity of soap and water consumed by a community is a fair indication of its degree of civilization, Manhattan must stand near the top of the ladder.

S. W. McGarrah, who is a new recruit in the faculty of the Mathematical Department, is a native of Pennsylvania. He attended Grove City College in western Pennsylvania, and holds the degree of A. M. from that institution. In 1887 he came to Halstead, Kan., where he was principal of schools for four years. He left there to assume the superintendency of the Anthony schools. When Prof. B. S. McFarland retired from the superintendency of the Olathe schools, in 1895, Mr. McGarrah was chosen to fill the vacancy, remaining in this position for six years. During his last year at Olathe he and L. N. Flint purchased the *Manhattan Nationalist*. Mr. McGarrah finally purchased Mr. Flint's interests, and during 1906 disposed of the *Nationalist* to Lyon and Gilbert. Last spring he purchased the *Manhattan Mercury*, of which he is now the editor and proprietor. It is his intention to dispose of the paper and devote himself again to educational work. He is a spirited and effective teacher, a lover of mathematical work, and an excellent disciplinarian. His friends are glad to see him back again in the ranks of the profession.

The morning hour of last Wednesday was devoted to memorial exercises in honor of Prof. Benjamin S. McFarland, whose sudden and unexpected death at Millersburg, Ky., on September 3, '07, was reported in the last *INDUSTRIALIST*. The program consisted in several addresses and appropriate music. President Nichols spoke of "The departed teacher and educator," Professor McKeever spoke of him as "The friend and example," and State Supt. Fairchild, who had come from Topeka to take part in the exercises, spoke of him as "The soldier and the citizen." The speakers characterized the departed as a straightforward and positive character, a warm and true friend, an enthusiastic and tireless educator, a brave soldier, a patriotic citizen, and a member of the board of instruction of the College whom it will be difficult to replace. The Auditorium was thronged with students, many of whom had been pupils of the departed instructor. Professor Valley sang an appropriate requiem, with piano accompaniment, Doctor Brink read a scripture text, and as the students filed out of the building the College Orchestra played an impressive funeral march composition. Professor McFarland will long be remembered by the students and teachers of the Agricultural College. All unite in saying, "Well done, thou good and faithful servant."

Station Bulletin No. 147, on Indian Corn, recently published by the Agronomy Department, has received much favorable notice by farmers and Experiment Station specialists. A feature of this bulletin is the report of the results of "breeding corn" of this department during the last four years. This bulletin is practically the first of its kind to be published in any state. A number of bulletins and books have been published discussing methods, plans, theories, etc., of corn breeding, but Bulletin No. 147 gives results of actual work in corn breeding, and these results are very interesting and important. Kansas may be congratulated as being the first state to publish such a bulletin.

Alumni and Former Students.

Nikolas Schmitz, '04, was married September 24 to Miss Clara I. McDuffee, of Batavia, N. Y. They will be at home after November 15 in Washington, D. C.

Jennie Ridenour, '04, is pleasantly settled at 3219 Sansom street, Philadelphia, where she is attending Drexel Institute, and is very much pleased with her opportunities.

Changes of address: Hattie M. Noyes, '91, 425 Moro street, Manhattan, Kan.; Sue (Long) Strauss, '96, Manhattan, Kan.; J. G. Arbuthnot, '04, Roslyn, Wash.; Alfred H. Baird, '07, Etiwanda, Cal.

Nora (Reed) Pierce, '98, Geyserville, Cal., and her two little boys, Howard and Lyle, visited College and friends for a day or two this week. She has spent the summer visiting her mother in Illinois, and was returning to her home. She will visit elsewhere in the State en route. She and her husband, John M. Pierce, '98, are prospering on a fruit farm.

The *Breeders Special* was a year old last week. Its chief editor is T. W. Morse, '95, who, though still called "Ted" by his friends, has, with his associates, in one short year made one of the brightest and best papers in existence for the breeder of good stuff, whether animal or vegetable. The reader may not know "Cute Keep On" from "Crimson Rambler," but he feels that the *Breeders Special* is near to "Perfection I Know."

The following letter has been received by President Nichols, from N. E. Lewis, '88. J. A. Lewis, '85, will be remembered as one of the most able and studious members of his class: "I have to inform you that my brother, Jas. A. Lewis, '85, of Brooklyn, N. Y., died September first. He was a student in the old days when the numbers were small and all were acquainted with one another. He attended the University of Michigan and received the degree of civil engineer, and followed the engineering profession the rest of his life. He gave very freely to help others and lived a quiet and plain life. He was an industrious and faithful worker. He suffered much with physical pain, which he very rarely alluded to. He was a great reader and possessed a wide range of knowledge."

Board of Instruction (concluded).

CLARENCE L. BARNES, D. V. M. (Cornell)	Asst. Professor of Veterinary Science
JOHN O. HAMILTON, B. S. (Chicago)	Assistant Professor of Physics
ANDREY A. POTTER, S. B. (Mass. Inst. Tech.)	Asst. Professor of Mechanical Engineering
ROBERT H. BROWN, B. M. (Kan. Con. of Music), B. S. (K. S. A. C.)	Asst. Professor of Music
BENJ. R. WARD, A. M. (Harvard)	Assistant Professor of English
GEO. A. DEAN, M. S. (K. S. A. C.)	Assistant Professor of Entomology
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Forestry.—Dairy Sanitation.

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Historical Society

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The Industrialist.

PRES. E. R. NICHOLS.....	Editor-in-Chief
PROF. J. D. WALTERS.....	Local Editor
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TERMS AND VACATIONS.

FALL TERM, 1907, THIRTEEN WEEKS.

Saturday, November 2.....	Mid-term examination
Thursday, November 28.....	Thanksgiving Day vacation
Thursday and Friday, December 19, 20.....	Examination at close of term

WINTER TERM, 1908, TWELVE WEEKS.

Monday, January 6.....	Examination for admission, at nine A. M.
Tuesday, January 7.....	Winter term begins
Tuesday, January 7.....	Short courses in agriculture and dairying begin
Saturday, January 25.....	Annual intersociety oratorical contest
Saturday, February 15.....	Mid-term examination
Thursday, March 19.....	Annual concert
Thursday and Friday, March 26, 27.....	Examination at close of term

SPRING TERM, 1908, ELEVEN WEEKS.

Monday, March 30.....	Examination for admission, at nine A. M.
Tuesday, March 31.....	Spring term begins
Saturday, May 9.....	Mid-term examination
Tuesday, May 19.....	Beginning of summer course in domestic science
Tuesday and Wednesday, June 16, 17.....	Examination at close of year
June 14 to 18.....	Exercises of Commencement week
Thursday, June 18, at ten A. M.....	Commencement
June 19 to September 16.....	Summer vacation

FALL TERM, 1908,

Wednesday, September 16.....	Examination for admission, at nine A. M.
Thursday, September 17.....	College year begins

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(Board of Instruction continued on last page.)

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No. 4

Forestry as a Profession.

The management and utilization of the forest is one of the most wealth-producing occupations of man. The forest and its products are second in importance only to things used for food. In the arts and trades the need of lumber is imperative. In the vast building operations, lumber is indispensable. In the beautifying of this earth of ours, trees are preëminently useful. In spite of the presence and wide use of iron, stone, and concrete, lumber promises always to have value. In some cases, as the white pine, lumber prices have become almost prohibitive. There are good reasons to believe that the maximum prices of lumber and other timber products have yet to come. The present lumber supply is deficient. The lumbering methods of the past have not been conducive to the proper regeneration of the forests. Reckless forms of management, lack of method, forest fires and grazing have forced the American people to a place where the fact of a lumber famine appears wholly possible, if not probable.

The direct products and the direct value of forests, which are enormous, do not present the only valid reasons for the awakening of things relating to forestry, and the pursuit of a vigorous and adequate policy of forest regeneration, management, and utilization. The indirect value of forest and timber trees is enormous and incalculable. The value is not imaginary, nor assumed because of an over æsthetic nature, but is taught us by observations in practical life. Nothing in nature with which man deals has greater influence upon the water flow from the watersheds of our country. In the forest-covered mountainous or hilly countries the abundant supply of water is uninterrupted. The volume of flow from mountain streams is more nearly uniform. The disastrous spring freshet is more likely to occur where the supplying watersheds are not protected by trees and their attendant layer of leaves upon a soil permeated with roots and decaying organic material. Barren regions are usually at the mercy of heavy rains and melting snows. In such regions the water rushes over the bare and slowly permeable soil, carrying the rich surface layer into the gullies and streams. Much of it reaches navigable rivers.

The more sluggish streams of the low-lands become filled with the soil sediment, and navigation may be hindered or entirely checked. In reëstablishing navigation by clearing the river beds, millions of dollars are expended. The value of the rich, forest-producing soil which has been washed away can not be calculated nor determined. Neither is it possible to correctly determine the losses due to expense and time required in upbuilding this region to its former productive condition. Again, in some regions the question of pure water is paramount. The water flowing from forest-protected regions is noted for its purity. As a valuable sanitary agent, the forest plays no unimportant role. As adding beauty and harmony to the rugged and barren mountains and hills, trees have no equal.

In the territory of the United States proper, it is estimated that there are 700,000,000 acres of timber land. The estimated volume is 2,000,000,000,000 feet. These forests are divided into three classes—private, state, and national. Most of the timber land belongs to private owners. The national forests of the United States, including the Island possessions, equal approximately 148,000,000 acres. In this area is included some land fitted for and subject to sale for agricultural purposes. Our government has withdrawn this large area of timber land from sale, purposing to hold and dispose of its timber for and to the citizens of this country in an equitable and just manner. The government forest service is attempting to care for the national forests in a thoroughly practical way. These millions of acres of timber land require many more men who have received practical training in the woods, and also many more college-trained men than are now available. No doubt the government will soon make more liberal provisions for the support of the forest service, in order that it may be enabled to employ more men, and more thoroughly and expeditiously carry on the operations connected with the care of such timber lands. Many, if not most of the leading citizens of our country, including our progressive President, are fully in accord with every movement that tends toward the conservation and proper management of our forests.

Forestry is a business. We plant trees in parks and along avenues and roadsides for æsthetic reasons. But a forester plants trees that he may secure a tangible product. Forest lands must be made to yield an income which is as great or greater than the interest on the investment. The forester strives to derive the maximum return with the minimum expenditure of time and money. The importance of proper management is neither

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work calls for a great deal of physical endurance. The forester must be a lover of camp life; must enjoy being alone, walking or riding through the woods, going many miles over rugged mountains or through swampy lowlands. He must be able to associate with all kinds of men, very often those that are rough and uneducated. He must possess, in a considerable degree, the knack of meeting men on their own ground. The forester must have a love of nature. He must love out doors, and enjoy a free and open life. If he possesses these qualities and has sufficient knowledge of things pertaining to forestry—trees, soils, climate, etc.—he ought not to fail in this profession. Such a life is a healthful and glorious one. The social life may seem very restrictive. The government policy at this time is making efforts so that a young man, if he be so disposed, may have a home of his own, and there enjoy that life which is so much to most of us.

No young man who expects to get a high salary, or works for money alone, should enter the forestry service. Salaries in this work are not high. In some cases, as in the case of rich estates, a high salary will often be paid to an expert man. The forest service, however, does pay such salaries and arranges the work in such a way that a man can live well. One is expected to get much or more enjoyment out of his work than out of his salary. We know how true it is that the most happy and enviable man in the world is he who works not for money alone, but for the work which he is doing and what he is accomplishing. Quoting from a government bulletin, the following salaries are stated as being paid for the positions named: Forest supervisor, \$1800 to \$2500; deputy forest supervisor, \$1500 to \$1700; forest ranger, \$1200 to \$1400; and forest assistant about \$1000 to \$1500.

One who takes up forestry as a profession need not feel that the only chance of employment is in the government service. There are abundant opportunities for employment in private forests, which compose about four-fifths of the timber land of our country. Or he may be engaged by owners of rich estates, many of whom control large tracts of forest land. The advanced forestry student may reasonably hope to become state forester, instructor of forestry in a college, or owner and manager of a forest. No doubt there are yet many openings for success by private persons who would plant trees for posts and ties. At this time it seems hardly necessary to emphasize the fact that the field for forestry is large and broad; that the work is becoming more important as the years go by; that openings for paid employment are increasing more rapidly than the number of candi-

dates; that the life of the forester is becoming more ideal, and that the men fitted for such work will meet with abundant success if they choose forestry as a profession.

ROBERT E. EASTMAN.

Sanitary Inspection of Dairies and Distributing Depots.

A systematic sanitary inspection of dairy farms and milk-distributing depots cannot be too strongly recommended. Recent investigations in various parts of the country have conclusively shown that the conditions on many of the farms and at many milk depots are anything but ideal; they are, in fact, about as bad as it is possible to conceive. Stables are poorly lighted, many having no windows whatever, and ventilation is not provided for. Little attention is paid to floors, ceilings, walls or stable yards. Swine, horses and poultry are often found in the same barn with the cows. Manure is not removed, or, when removed, is thrown through an opening in the wall or just outside the door, frequently near the milk room. The necessary appliances for sterilizing and cooling in the milk room are often lacking, making it impossible to properly wash and sterilize pails, cans, bottles, and other appliances, or to properly cool and hold at a low temperature the milk before delivery.

Milk dealers as a rule have more regard for sanitation and have better appliances than are to be found on the average farm, but some common practices are deplorable. Very few dealers have appliances for sterilizing bottles. Drivers not infrequently bottle milk on the wagon, using bottles that have come from some household and have not been sterilized. Wagons and appliances are not kept in as sanitary condition as should be required. A number of dealers do not separate business from home operations. Help of unknown origin and doubtful habits is employed and is a constant menace to purity of milk. Up to April 5 of the present year a careful examination had been made, under the supervision of the Department of Agriculture, of 727 dairies supplying milk to the District of Columbia. This examination took into account only the sanitary condition of the farms, and did not include the health of the animals nor an examination of the water-supply, except as these points would be revealed by observation on the premises at the time of inspection. The average rating of these 727 dairies, on the basis of 100 as perfect, was 45.1 per cent. Thirty-three were above 75 per cent, 278 between 50 and 75 per cent, and 407 scored less than 50 per cent. The tuberculin test had been applied to but four of the herds, though many proprie-

tors stated that the test would be applied in the near future. With tested herds and a pure water-supply assured, this showing would be deplorable, but, under existing conditions of probable water contaminations and but four out of 727 herds tuberculin tested, what shall be said?

A similar study has been made of conditions in the city, and the situation there is not nearly so bad as in the country. Seventy-three milk depots were examined, of which 46 were rated above 75 per cent and 27 between 57.5 and 75 per cent.

The situation in Washington is not different from that confronting the health departments of most of the cities of any size throughout the country. The public is gradually awakening to the fact that these conditions must be changed. In order to bring about these changes within the District of Columbia the following recommendations are made:

1. That a sufficient number of inspectors be employed so that each inspector shall have not over 100 farm dairies, and at least three inspectors shall be employed to cover milk stores. That one of these inspectors shall be at the same time chief dairy inspector and shall receive a salary of \$2000 per annum and traveling expenses.

2. That the inspectors so employed shall devote their entire time to the work of inspection, and that the salaries be commensurate for the technical skill and experience of the men employed—not less than \$1600 to \$1800 per year and traveling expenses.

3. That these men shall have technical training in the production and handling of milk, and that at least five of every ten inspectors employed to inspect farms shall be skilled veterinarians.

4. That the health officer shall have full authority to make rules and regulations and enforce the same, so as to safeguard the milk supply of the District from contamination through carelessness, ignorance, or malicious intent.

5. That the health officer or any authorized inspector shall have authority to revoke instantly the license or right to sell milk in the city if provisions of such regulations are not complied with, where, in his judgment, such violation endangers the health of the consumer.

The following are suggested as ideal conditions, which might be used as a basis for rules and regulations:

1. Have the herd examined frequently by a skilled veterinarian. Promptly remove any animals suspected of being in bad health. Never add an animal to the herd until certain it is free from disease, especially tuberculosis.

2. Never allow a cow to be excited by hard driving, abuse, loud talking, or unnecessary disturbances; do not unduly expose her to cold or storms.

3. Clean the entire body of the cow daily. Hair in the region of the udder should be kept short. Wipe the udder and surrounding parts with a clean, damp cloth before milking.

4. Do not allow any strong-flavored feed, such as garlic, cabbage, or turnips, to be eaten except immediately after milking.

5. Salt should always be accessible.

6. Radical changes in feed should be made gradually.

7. Have fresh, pure water in abundance, easy of access, and not too cold.

8. Dairy cattle should be kept in a stable where no other animals are housed, preferably without cellar or storage loft. Stable should be light (four square feet of glass per cow) and dry, with at least 500 cubic feet of air to each animal. It should have air inlets and outlets, so arranged as to give good ventilation without drafts of air on cows. The presence of flies may be reduced by darkening the stable and removing manure as directed below.

9. The floor, walls, and ceilings of the stable should be tight, walls and ceilings being kept free of cobwebs, and whitewashed twice a year. There should be as few dust-catching ledges and projections as possible.

10. Allow no musty or dirty litter or strong-smelling material in the stable. Store manure under cover at least forty feet from the stable in a dark place. Use land plaster daily in gutter and on floor.

11. Cans should not remain in the stable while being filled. Remove the milk of each cow at once from the stable to a clean room; strain immediately through cotton flannel or absorbent cotton; cool to 50° F. as soon as strained; store at 50° F. or lower. All milk houses should be screened.

12. Milk utensils should be made of metal, with all joints smoothly soldered, or, when possible, should be made of stamped metal. Never allow utensils to become rusty or rough inside. Use milk utensils for nothing but handling, storing or delivering milk.

13. To clean dairy utensils use pure water only. First rinse the utensils in warm water; then wash inside and out in hot water in which a cleansing material has been dissolved; rinse again, sterilize with boiling water or steam; then keep inverted in pure air that may have ready access, and sun if possible, until ready for use.

14. The milker should wash his hands immediately before milking and should milk with dry hands. He should wear a clean outer garment, which should be kept in a clean place when not in use. Tobacco should not be used while milking.

15. In milking be quiet, quick, clean, and thorough. Commence milking at the same hour every morning and evening, and milk the cows in the same order.

16. If any part of the milk is bloody, stringy, or unnatural in appearance, or if by accident dirt gets into the milk pail, the whole mess should be rejected.

17. Weigh and record the milk given by each cow.

18. Never mix warm milk with that which has been cooled, and do not allow milk to freeze.

19. Feed no dry, dusty feed just previous to milking.

20. Persons suffering from any disease, or who have been exposed to a contagious disease, must remain away from the cows and the milk.

21. It is needless to say that the shorter the time between the production of milk and its delivery, and between delivery and use, the better will be the quality of the milk. ED. H. WEBSTER.

Interstate Fair.

Those who attended the Interstate Fair and Horse Show down at South St. Joseph, Mo., last year and again this year were impressed by the substantial progress that has been made in this new show. From all quarters good words could be heard for Manager Irwin and his well-trained corps, and the masterly way in which every detail was planned and carried out. Evening entertainment was provided in the way of a grand military tournament, in which 3000 of Uncle Sam's best-trained soldiers, representing seven army posts, took part. This feature proved a great drawing card, especially for the city people. The buildings and offices were beautifully decorated in red and white bunting—in fact, the whole city was draped in red and white. About \$21,000 was spent on the show this year. This amount was a third larger than that expended last year.

There was an increase in the amount of prizes offered for most classes, and representatives from all of the best herds and flocks in the Mississippi valley states could be found in the barns and pens. Most classes were well filled and nearly all the competition was close. As is usually the case in a stock-yard show, the exhibition of fat stock was strong. The steer classes were well filled, and the quality of the exhibition was equal to that found at any of

the larger shows. All the steer classes were judged by three of the leading packers from the yards.

The steers from the College herd left home for the first time this year to attend this show. While they did not win everything in sight, they carried off their share of the ribbons. A two-year-old, pure-bred shorthorn steer, Capt. Primrose, was first in his class; and in the yearling class, Col. Harriman had to be contented with second place. In the calf class, the red calf, Judge, raised by the College, was awarded the blue ribbon.

In the grade shorthorns the two-year-old steer, Pride of the Maples, was awarded first and championship. In the pure-bred Angus classes, a two-year-old steer, Castro, was placed third; Ideal, a yearling, was first in his class, and later was made champion of the breed; and the Angus calf, Winfield, was only successful in leading second place.

The only Hereford shown by the College was a pure-bred yearling, which wore the red ribbon from the ring. The total prizes won by the steers exhibited by the College amounted to \$264.00. This amount is \$99.00 larger than was won by the College at the St. Joseph show last year. With the exception of the calves, these steers are the same that were exhibited by the College last year. Capt. Primrose, the two-year-old shorthorn, was first in his class at the American Royal last year and fourth at the International. He is large, red-roan in color, has an ideal feeder's head, is a beautiful steer from the front view, but lacks in smoothness in filling about the rump and hind quarters. Col. Harriman was the white calf of last year's herd and has developed into a yearling that is bound to attract attention in his class. Barring a rather homely head and a little roughness about the shoulders, he is an ideal feeder's type of steer, extraordinary strong in the hind quarters and loins, with a mellow and soft, silky coat.

The calf which makes up the pure-bred shorthorn herd was raised on the College farm. His dam was sired by Master of the Grove, the grand old bull that is again covering himself with glory this year. The sire of this calf was Lopaz by Lord Mayor. He was an easy winner in his class, and many favorable comments have been passed upon him. He may be faulted for being a little too growthy and having a little too much daylight under him. The two-year-old grade shorthorn, Pride of the Maples, bred by Mr. A. F. Huse, of Manhattan, was rated the same at the St. Joseph show this year that he was last year, and later being made the champion of his group. He received the same rating in last year's Royal Show, and was a little out of condition by the time

he reached the International and had to be contented with other than the blue ribbon. He was pronounced by good judges to be the grandest type of shorthorn steer seen at an international show in recent years.

The pure-bred, two-year-old Angus steer which the College is exhibiting this year was bred by Mr. G. F. Wagner, Enterprise, Kan. Mr. Wagner will be remembered by many former graduates of the College as "Doc." Wagner, the famous baseball player. This steer has a typical Angus conformation, but lacks a little in flesh, not yet having been fed long enough for making a special showing, but if he goes ahead as he promises to do he may be expected to give a better account of himself before the year's shows are over.

Ideal, the yearling Angus, stood first in his class at St. Joseph, Kansas City and Chicago last year, and in this first show of this season has again made a successful start, winning first in his class and championship of his breed. The Angus calf is a very promising little fellow, and it was the opinion of many of the ring-side observers that he should have received the blue ribbon instead of the red.

The College herd will be exhibited at the American Royal at Kansas City from the 14th to the 21st of October, and at the International Live Stock Exhibition at Chicago from November 30 to December 6.

The Enrolment.

Secretary Clemons reports the following attendance by classes for the first week in October:

	1906	1907
Seniors	115	115
Juniors	133	131
Sophomores	209	342
Freshmen and Sub-freshmen	668	772
Preparatory	107	93
Graduates	8	8
Specials	25	22
D. S. Short Course	85	123
Totals.....	1350	1646

The above comparison of the attendance of 1906 and '07 shows a gain over last year of 296 students—that is, an increase of 21.9 per cent. This is an unusual growth for a college of this magnitude. We do not doubt now that the winter term will greatly increase the number and that the grand total for the year will be above twenty-two hundred.

Local Notes.

A feed water heater is being put in for the College heating plant.

Jennie Ridenour, '04, has entered Drexel Institute for a post-graduate course in domestic art.

The blue-grass on the campus in front of Anderson Hall, sown before the rain ten days ago, is coming up nicely.

Perry A. Cooley, '06, is now private secretary to President Nichols. Mr. Cooley is a College Hill boy and recently graduated from the Salina Business College.

W. L. Endfield, for six years at the head of the department of physics and chemistry in the Wichita high school, is student assistant in the Physics Department.

While working in the bacteriology laboratory Saturday, Miss Kate Cooper severely burned her arm and hand by the explosion of a leaking gas jet.—*Students' Herald*.

Foreman Henry Spuhler, of the new Veterinary Science Hall, is pushing things right along. The excavating is nearly completed, and work on the concrete foundations has been started.

Professor McKeever will give an address before the Missouri State Teachers' Association during the holidays, and not before the Kansas Association, as was recently announced in several Kansas papers.

Miss Flora Rose, who will be remembered as an instructor in domestic science here until a year ago, in connection with Miss Van Rensalaer, is organizing a department of domestic economy at Cornell University.—*Students' Herald*.

Contractor Walter Stingley has put the window frames of the main story of the new Domestic Science Hall in place and says that he will be able to complete the stonework of this story by the end of October. The building already begins to loom up, especially from the southwest.

Wm. Neill and son George were at the Interstate Fair at Kansas City. The temporary loss by the railroad company of the pump for the milking machine caused much disappointment, not only to Mr. Neill, but to hundreds of visitors who desired especially to see this machine in action.

The opening football game of the season was played here on Monday, October 7, between K. S. A. C. and College of Emporia. The score was 46 to 0 in favor of our boys. The Emporia team did their best, but were simply outclassed. The K. S. A. C. goal was never in danger, as their opponents were too light to break the line. Sol. Cunningham made the spectacular play of the game by making a goal on Emporia's kickoff, running about ninety-five yards. He also kicked seven goals out of eight. Referee James Masters gave complete satisfaction.

Manhattan is growing. The directory just issued by Geo. C. Hall gives maps showing the location of every house, with the name of the head of the family living therein. The maps show about 1150 homes in Manhattan. This number of houses would indicate a population of 6000 people, exclusive of the College students.

Captain Shaffer has been relieved from duty at the College, to take effect on October 15, and will join his regiment at Parang, Mindanao, Philippine Islands. Cadet Captain Elmer Bull will be in command of the battalion until Captain Shaffer's successor arrives. The War Department has not yet designated an officer to fill the vacancy.

November 7 and 8 have been decided upon as the days to hold the annual Riley County Farmers' Institute. At that time, in conjunction with an excellent program, will occur the judging and awarding of prizes in the boys' and girls' contests. The program will include many well-known State speakers, and also a good speaker or two out of the State.

The program of the tenth annual meeting of the Kansas Gas, Water, Electric Light and Street Railway Association, held at Topeka October 9 and 10, contains two numbers by Agricultural College men. Prof. B. F. Eyer read a paper on "Economics of High Efficiency Lamps" and J. T. Skinner, now superintendent of the Lawrence Electric Light Company, read a paper on "Increased Sales to the Present Consumer."

On October 3 the Western Electric Company moved the Chicago branches of their physical and telephone laboratories to New York City, combining them with the laboratories at that place. Only the best of the Chicago men were sent to New York, and it is with considerable satisfaction that we note that Charles Blachly, '05, was one of the four men from the physical laboratory, and George Wolf, '05, was one of the two from the telephone laboratory that were transferred. These six men were chosen from among twenty-five or thirty, and this speaks well for these K. S. A. C. boys, whose opportunities will now be greatly increased.

As a result of the recent promotions, officers of the cadet battalion will be as follows: Earl A. Cole, first lieutenant and battalion adjutant; Kirk P. Cecil, second lieutenant and battalion quartermaster; Wm. A. Droge, battalion sergeant-major; Glen A. Dawes, quartermaster sergeant; George R. Brown, color-sergeant. Company A.—Elmer Bull, captain; Bruce Wilson, first lieutenant; Rudolph B. Nelson, second lieutenant. Company B.—Wayne B. Cave, captain; Chas. E. Cassel, first lieutenant; John F. O'Connor, second lieutenant. Company C.—David A. Kratzer, captain; Guy C. Rexroad, first lieutenant; Joe G. Lill, second lieutenant. Company D.—Sol. W. Cunningham, captain; Malcolm C. Sewell, first lieutenant; Earl L. Edwards, second lieutenant.

The Music Department of the College has enrolled 140 pupils in vocal music and 413 in piano and string instruments this fall term. There is also a class in harmony and a class of advanced students in orchestra music. The latter form an active orchestra and play for the chapel exercises every morning. The students in brass and reed instruments form the College Band, which furnishes music for the cadet battalion. The following is the membership of the band this fall term: Clarinets—Chas. McKirahan, G. R. Eaton, H. E. Hershey, H. P. Bates, Jno. Tinkham, Earle Reaume, H. Bender, C. A. McIntosh, C. Hillman, P. E. McNall, F. Harrison, J. R. Carnahan, J. J. Price. Piccolo—R. M. Page, M. J. Oteyza. Saxophones—F. Kreamer, L. L. Shaw, G. Bartholomees. Bassoon—L. Davis. Cornets—Jno. McCanles, C. Marty, L. A. Sturges, A. D. Jackman, P. V. Kelley, M. Dietrich, T. Parker, J. Vale, V. Buch, I. Ingraham, H. Reppert, H. L. Morehead. Horns—R. R. Hand, G. May, R. H. Reynolds, F. Rader. Trombones—J. McClung, W. King, E. E. Smith, R. Moorman, F. Kirgis, H. R. Crandall, R. E. Blair. Euphonium—G. Christy, H. E. Bixby. Baritone—A. G. Kittell. Basses—D. Walters, H. E. Porter, G. Neill, A. W. Seng. Drums—D. D. Gray, W. Ross, A. E. Fairman, D. G. Roth. Tympani—K. W. March. The band practices 45 minutes every afternoon under the direction of Asst. Prof. H. Brown.

Alumni and Former Students.

Mabelle Sperry, '06, asks that her INDUSTRIALIST be sent to Clifton, Kan., where she is teaching in the high school.

From the *Indian School Journal* for October we learn that Roger W. Bishoff, '97, has been transferred from Wyandotte, I. T., to Chilocco, Okla., where he is disciplinarian in the United States Indian School.

W. J. Rhoades, '97, and Edith (Huntress) Rhoades, '01, visited College recently. Mr. Rhoades returned to Olathe Monday, but Mrs. Rhoades and little daughter will remain for a few weeks to visit Manhattan friends.

Mrs. J. M. Pierce (Nora Reed, '98) visited a day with her classmates, Dr. and Mrs. W. A. McCullough, at Delavan, Kan., and also had a short visit with Dr. Schuyler Nichols, at Herington, before leaving for her California home.

Changes of address: P. M. Biddison, '04, Independence, Kan.; O. L. Utter, '88, 69 South Yellow Springs street, Springfield, O.; Walter O. Gray, '04, Galena, Kan.; M. L. Walter, '07, R. F. D. No. 6, Lawrence, Kan.; Grover C. Kahl, '07, 11½ north College street, Schenectady, N. Y.; Kate (Oldham) Sisson, '92, 190 West 11th Avenue, Columbus, O.; R. A. Fulton, '05, and Fanny (Reynolds) Fulton, '05, 10828 Hampden Avenue, Cleveland, O.; V. I. Sandt, '94, 119 East Sanborn street, Winona, Minn.; Emilie (Pfuetze) Samuel, '98, Stockdale, Kan.

Board of Instruction (concluded).

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Miss Anna I. McKirahan	Assistant in Music
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G. A. Porteous	Herdsman
Wm. A. Lamb	Poultryman
Floyd Howard	Farm Foreman
William R. Lewis	Custodian

Historical Society

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# The Industrialist.

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|--------------------------|-----------------|
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| PROF. J. D. WALTERS..... | Local Editor    |
| PROF. J. T. WILLARD..... | Alumni Editor   |

## TERMS AND VACATIONS.

### FALL TERM, 1907, THIRTEEN WEEKS.

|                                           |                              |
|-------------------------------------------|------------------------------|
| Saturday, November 2.....                 | Mid-term examination         |
| Thursday, November 28.....                | Thanksgiving Day vacation    |
| Thursday and Friday, December 19, 20..... | Examination at close of term |

### WINTER TERM, 1908, TWELVE WEEKS.

|                                        |                                                 |
|----------------------------------------|-------------------------------------------------|
| Monday, January 6.....                 | Examination for admission, at nine A. M.        |
| Tuesday, January 7.....                | Winter term begins                              |
| Tuesday, January 7.....                | Short courses in agriculture and dairying begin |
| Saturday, January 25.....              | Annual intersociety oratorical contest          |
| Saturday, February 15.....             | Mid-term examination                            |
| Thursday, March 19.....                | Annual concert                                  |
| Thursday and Friday, March 26, 27..... | Examination at close of term                    |

### SPRING TERM, 1908, ELEVEN WEEKS.

|                                         |                                                |
|-----------------------------------------|------------------------------------------------|
| Monday, March 30.....                   | Examination for admission, at nine A. M.       |
| Tuesday, March 31.....                  | Spring term begins                             |
| Saturday, May 9.....                    | Mid-term examination                           |
| Tuesday, May 19.....                    | Beginning of summer course in domestic science |
| Tuesday and Wednesday, June 16, 17..... | Examination at close of year                   |
| June 14 to 18.....                      | Exercises of Commencement week                 |
| Thursday, June 18, at ten A. M.....     | Commencement                                   |
| June 19 to September 16.....            | Summer vacation                                |

### FALL TERM, 1908,

|                              |                                          |
|------------------------------|------------------------------------------|
| Wednesday, September 16..... | Examination for admission, at nine A. M. |
| Thursday, September 17.....  | College year begins                      |

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(Board of Instruction concluded on last page.)

# THE INDUSTRIALIST.

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MANHATTAN, KAN., OCT. 19, 1907.

No. 5

## *Institute Schedule.*

Following is a list of farmers' institutes arranged for the fall of 1907, giving dates and speakers from the College, and in a few instances speakers of some note not connected with the College.

### EARLY INSTITUTES.

Garrison, Friday, September 13; Wheeler and Dow.

Vinland, Friday, September 27; Miller.

Lecompton, Saturday, September 28; Miller.

Girard, Friday and Saturday, September 27 and 28; Wheeler.

Denison, Monday and Tuesday, October 7 and 8; Burkett and Wheeler.

Osage City, Tuesday, October 8; Miller and Kendall.

•Louisburg, Wednesday and Thursday, October 9 and 10; Miller and Wheeler.

Waverly, Thursday and Friday, October 10 and 11; Miller and Wheeler.

Wakefield, Thursday and Friday, October 10 and 11; Burkett and Schoenleber.

Monticello (near Wilder), Wednesday, October 16; Ten Eyck.

Junction City, Friday, October 18; Ten Eyck.

### NORTHERN CIRCUIT.

Norton, Monday and Tuesday, October 14 and 15; Miller, Fairchild, Schoenleber, and Lewelling.

Phillipsburg, Tuesday and Wednesday, October 15 and 16; Miller, Fairchild, Schoenleber, and Lewelling.

Smith Center, Wednesday and Thursday, October 16 and 17; Miller, Fairchild, Schoenleber, and Lewelling.

Mankato, Thursday and Friday, October 17 and 18; Miller, Fairchild, Schoenleber, and Lewelling.

Belleville, Friday and Saturday, October 18 and 19; Miller, Fairchild, Schoenleber, and Lewelling.

Jamestown, Saturday, October 19; Miller and Fairchild.

Clyde, Monday, October 21; Schoenleber and Lewelling.

Washington, Monday and Tuesday, October 21 and 22; Miller, Fairchild, Schoenleber, and Lewelling.

Blue Rapids, Tuesday and Wednesday, October 22 and 23; Miller, Fairchild, Schoenleber, and Lewelling.

Westmoreland, Wednesday and Thursday, October 23 and 24; Miller, Fairchild, Kinzer, and Lewelling.

Oskaloosa, Thursday and Friday, October 24 and 25; Burkett, Fairchild, Kinzer, and Lewelling.

Tonganoxie, Friday and Saturday, October 25 and 26; Burkett, Fairchild, Kinzer, and Lewelling.

Lawrence, Saturday, October 26; Burkett and Fairchild.

Lincoln, Monday and Tuesday, October 28 and 29; Miller, Starr, Schoenleber, and Kendall.

Hoxie, Tuesday and Wednesday, October 29 and 30; Miller, Starr, Schoenleber, and Kendall.

Hill City, Wednesday and Thursday, October 30 and 31; Miller, Starr, Schoenleber, and Kendall.

Plainville, Thursday, October 31; Miller and Starr.

Natoma, Friday, November 1; Schoenleber and Kendall.

Abilene, Friday and Saturday, November 1 and 2; Miller, Starr, Schoenleber, and Kendall.

Salina, Saturday, November 2; Miller and Starr.

Concordia, Monday, November 4; Kendall and Lewelling.

Minneapolis, Monday and Tuesday, November 4 and 5; Miller, Roberts, Kinzer, and Lewelling.

Beloit, Tuesday and Wednesday, November 5 and 6; Miller, Roberts, Kinzer, and Lewelling.

Clay Center, Wednesday and Thursday, November 6 and 7; Miller, Roberts, Kinzer, and Lewelling.

Manhattan, Thursday and Friday, November 7 and 8; Miller, Roberts, Kinzer, and Lewelling.

Alma, Friday and Saturday, November 8 and 9; Miller, Roberts, Kinzer, and Lewelling.

#### SOUTHEASTERN CIRCUIT.

Olathe, Monday and Tuesday, October 21 and 22; Wheeler, Crabtree, TenEyck, and Calvin.

Mound City, Tuesday and Wednesday, October 22 and 23, Wheeler, Crabtree, TenEyck, and Calvin.

Fort Scott, Wednesday and Thursday, October 23 and 24; Wheeler, Crabtree, TenEyck, and Calvin.

Columbus, Thursday and Friday, October 24 and 25; Wheeler, Crabtree, TenEyck, and Calvin.

Altamont, Friday and Saturday, October 25 and 26; Wheeler, Crabtree, TenEyck, and Calvin.

Elk City, Saturday, October 26; Wheeler and Crabtree.

Independence, Monday, October 28; TenEyck and Calvin.

Erie, Monday and Tuesday, October 28 and 29; Wheeler, Crabtree, TenEyck, and Calvin.

LaHarpe, Tuesday and Wednesday, October 29 and 30; Wheeler, Crabtree, TenEyck, and Calvin.

Garnett, Wednesday and Thursday, October 30 and 31; Wheeler, Crabtree, TenEyck, and Calvin.

Ottawa, Thursday and Friday, October 31 and November 1; Wheeler, Crabtree, TenEyck, and Calvin.

Lyndon, Friday and Saturday, November 1 and 2; Wheeler, Crabtree, TenEyck, and Calvin.

Madison, Saturday, November 2; Wheeler and Crabtree.

Toronto, Monday, November 4; Burkett and Calvin.

Howard, Monday and Tuesday, November 4 and 5; Wheeler, Crabtree, Burkett, and Calvin.

Fredonia, Tuesday and Wednesday, November 5 and 6; Wheeler, Crabtree, Burkett, and Calvin.

Eureka, Wednesday and Thursday, November 6 and 7; Wheeler, Crabtree, Burkett, and Calvin.

Yates Center, Thursday and Friday, November 7 and 8; Wheeler, Crabtree, Burkett, and Calvin.

Burlington, Friday and Saturday, November 8 and 9; Wheeler, Crabtree, Burkett, and Calvin.

SOUTH-CENTRAL CIRCUIT.

Burlingame, Monday, November 11; Burkett and Lewelling.  
 Emporia, Monday and Tuesday, November 11 and 12; Miller, Fairchild, Wheeler, and Lewelling.  
 Cottonwood Falls, Tuesday and Wednesday, November 12 and 13; Miller, Fairchild, Wheeler, and Lewelling.  
 Marion, Wednesday and Thursday, November 13 and 14; Miller, Fairchild, Wheeler, and Lewelling.  
 Newton, Thursday and Friday, November 14 and 15; Miller, Fairchild, Wheeler, and Lewelling.  
 Burrton, Friday, November 15; Miller and Fairchild.  
 McPherson, Saturday, November 16; Wheeler and Lewelling.  
 Wichita, Saturday, November 16; Miller and Fairchild.  
 Haven, Monday, November 18; Miller and Fairchild.  
 Lyons, Monday, November 18; Wheeler and Kendall.  
 Nickerson, Tuesday, November 19; Wheeler and Kendall.  
 Great Bend, Tuesday and Wednesday, November 19 and 20; Miller, Calvin, Wheeler, and Kendall.  
 Larned, Wednesday and Thursday, November 20 and 21; Miller, Calvin, Wheeler, and Kendall.  
 Kinsley, Thursday and Friday, November 21 and 22; Miller, Calvin, Wheeler, and Kendall.  
 St. John, Friday, November 22; Miller and Calvin.  
 Pratt, Saturday, November 23; Miller and Calvin.  
 Sylvia, Saturday, November 23; Wheeler and Kendall.  
 Castleton, Monday, November 25; Wheeler and Kendall.  
 Kingman, Monday and Tuesday, November 25 and 26; Miller, Calvin, Wheeler, and Kendall.  
 Anthony, Tuesday and Wednesday, November 26 and 27; Miller, Calvin, Wheeler, and Kendall.  
 South Haven, Wednesday, November 27; Miller and Calvin.  
 Mulvane, Friday and Saturday, November 29 and 30; Wheeler and Kendall.  
 Sedan, Monday, December 2; Dickens and Schoenleber.  
 Cedarvale, Tuesday, December 3; Dickens and Schoenleber.  
 Burden, Wednesday, December 4; Dickens and Schoenleber.  
 Hackney, Thursday and Friday, December 5 and 6; Dickens, Schoenleber, and Miller.  
 Wellington, Friday and Saturday, December 6 and 7; Dickens, Schoenleber, and Miller.

SOUTHWESTERN CIRCUIT.

Dodge City, Tuesday, November 5; Dickens and TenEyck.  
 Cimarron, Wednesday, November 6; Dickens and TenEyck.  
 Garden City, Thursday, November 7; Dickens and TenEyck.  
 Lakin, Friday, November 8; Dickens and TenEyck.  
 Syracuse, Saturday, November 9; Dickens and TenEyck.  
 Johnson, Monday, November 11; Dickens and TenEyck.  
 Richfield, Tuesday, November 12; Dickens and TenEyck.  
 Hugoton, Wednesday, November 13; Dickens and TenEyck.  
 Ulysses, Thursday, November 14; Dickens and TenEyck.  
 Santa Fé, Friday, November 15; Dickens and TenEyck.  
 Liberal, Saturday, November 16; Dickens and TenEyck.  
 Meade, Monday, November 18; Dickens and Burkett.  
 Ashland, Tuesday, November 19; Dickens and Burkett.

Coldwater, Wednesday, November 20; Dickens and Burkett.  
 Bucklin, Thursday, November 21; Dickens and Burkett.  
 Greensburg, Friday, November 22; Dickens and Burkett.

## WESTERN (MISSOURI PACIFIC) CIRCUIT.

LaCrosse, Monday, December 9; Wheeler and Miller.  
 Tribune, Tuesday, December 10; Wheeler and Miller.  
 Leoti, Wednesday, December 11; Wheeler and Miller.  
 Scott City, Thursday, December 12; Wheeler and Miller.  
 Dighton, Friday, December 13; Wheeler and Miller.  
 Ness City, Saturday, December 14; Wheeler and Miller.  
 McCracken, Monday, December 16; Wheeler and Miller.  
 Lindsborg, Tuesday, December 17; Wheeler and Miller.  
 Council Grove, Wednesday and Thursday, December 18 and 19; Wheeler and Miller.

## WESTERN (UNION PACIFIC) CIRCUIT.

Ellsworth, Monday and Tuesday, December 9 and 10; Burkett, Calvin, Kinzer, and Phipps.  
 Russell, Tuesday and Wednesday, December 10 and 11; Burkett, Calvin, Kinzer, and Phipps.  
 Hays, Wednesday and Thursday, December 11 and 12; Burkett, Calvin, Kinzer, and Phipps.  
 Wakeeney, Thursday and Friday, December 12 and 13; Burkett, Calvin, Kinzer, and Phipps.  
 Grainfield, Friday, December 13; Burkett and Calvin.  
 Oakley, Saturday, December 14; Burkett and Phipps.  
 Goodland, Saturday, December 14; Dickens and Kinzer.

## NORTHWESTERN CIRCUIT NO. 1.

St. Francis, Monday, December 16; Dickens and Kinzer.  
 Atwood, Tuesday, December 17; Dickens and Kinzer.  
 Oberlin, Wednesday and Thursday, December 18 and 19; Dickens and Kinzer.  
 Norcatour, Friday, December 20; Dickens and Kinzer.

## NORTHWESTERN CIRCUIT NO. 2.

Colby, Monday, December 9; Willard and Kendall.  
 Jennings, Tuesday, December 10; Willard and Kendall.  
 Lenora, Wednesday, December 11; Willard and Kendall.  
 Logan, Thursday, December 12; Willard and Kendall.  
 Kirwin, Friday, December 13; Willard and Kendall.  
 Gaylord, Saturday, December 14; Willard and Kendall.  
 Stockton, Monday and Tuesday, December 16 and 17; Willard and Kendall.  
 Osborne, Wednesday, December 18; Willard and Kendall.  
 Downs, Thursday, December 19; Willard and Kendall.  
 Glasco, Friday, December 20; Willard and Kendall.

## NORTHEASTERN CIRCUIT.

Holton, Monday and Tuesday, December 16 and 17; TenEyck, Mrs. Calvin, Schoenleber, and Webster.  
 Effingham, Tuesday and Wednesday, December 17 and 18; TenEyck, Mrs. Calvin, Schoenleber, and Webster.  
 Hiawatha, Wednesday and Thursday, December 18 and 19; TenEyck, Mrs. Calvin, Schoenleber, and Webster.  
 Oneida, Thursday and Friday, December 19 and 20; TenEyck, Mrs. Calvin, Schoenleber, and Webster.

## EXTRA MEETINGS.

Topeka, Indian Creek, Oak Grange, Rome, Arkansas City.

***The Library Apportionment.***

The Faculty, at its meeting last week, made arrangements for the further growth of the College Library as follows: Of the total appropriation of \$2000 made for library purposes by the last legislature, \$375 will be expended for current literature; that is, for magazines and technical periodicals which cannot be obtained by exchanging with the College publications; \$390 were reserved for cyclopedias, dictionaries, and other books of reference, and \$40 were set aside for freight and express expenses. The remainder was apportioned among the different College departments, with the proviso that all proposed purchases must have the approval of the Faculty committee on Library. The following is the apportionment adopted: Agriculture, Animal Husbandry, Architecture, Domestic Science, Dairying, and Philosophy will receive \$55 each; Botany, Chemistry, English, History, Mechanical Engineering, Physics, Horticulture, and Entomology, \$80 each; Veterinary Science, \$60; German, \$35; Mathematics, \$30; Music, \$25; Military Science, and Domestic Art, \$15 each. The list of periodicals ordered to be purchased for next year includes the following magazines and papers:

|                                                                 |                                |
|-----------------------------------------------------------------|--------------------------------|
| American Architect and Building News.                           | Compressed Air.                |
| American Blacksmith.                                            | Country Life in America.       |
| American Chemical Journal.                                      | Contemporary Review.           |
| American Geologist.                                             | Dial.                          |
| American Historical Review.                                     | Edinburgh Review.              |
| American Journal of Physiology.                                 | Eclectic Magazine.             |
| American Journal of Psychology.                                 | Educational Review.            |
| American Journal of Science.                                    | Education.                     |
| American Journal of Sociology.                                  | Electrician.                   |
| American Machinist.                                             | Electric Journal.              |
| American Mathematical Monthly.                                  | Electrical World and Engineer. |
| American Naturalist.                                            | Electro Chemical Industry.     |
| American Veterinary Review.                                     | Engineering.                   |
| Analyst.                                                        | Engineering Magazine.          |
| Annals of the American Academy of Political and Social Science. | Engineering Index.             |
| Annals of Botany.                                               | Engineering News.              |
| Arena.                                                          | Entomological News.            |
| Army and Navy Journal.                                          | Etude.                         |
| Auk.                                                            | Farming.                       |
| Atlantic Monthly.                                               | Fliegende Blatter.             |
| Bookman.                                                        | Field and Stream.              |
| Biometrika.                                                     | Forum.                         |
| Boston Cooking School Magazine.                                 | Fortnightly Review.            |
| Botanical Gazette.                                              | Garden.                        |
| Brush and Pencil.                                               | Gardener's Chronicle.          |
| Bulletins of the Torrey Botanical Club.                         | Garden Magazine.               |
| Canadian Entomologist.                                          | Good Housekeeping.             |
| Century Magazine.                                               | Harper's Bazar.                |
| Canadian Horticulturist.                                        | Harper's Magazine.             |
| Charities and the Commons.                                      | House Beautiful.               |
| Chemical News.                                                  | Holstein Fresian Register.     |
|                                                                 | Ice and Refrigeration.         |
|                                                                 | Inland Architect.              |
|                                                                 | Inland Printer.                |

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|----------------------------------------------|-----------------------------------------------------|
| International Journal of Ethics.             | Nature.                                             |
| International Quarterly.                     | North American Review.                              |
| Iron Age.                                    | Nineteenth Century.                                 |
| Journal of American Chemical Society.        | Outlook.                                            |
| Journal of Chemical Society.                 | Outing.                                             |
| Journal of Infectious Diseases.              | Operative Miller.                                   |
| Journal of Military Service Institutions.    | Philosophical Magazine and Journal of Science.      |
| Journal of New York Entomological Society.   | Philosophical Review.                               |
| Journal of Physical Chemistry.               | Physical Review.                                    |
| Journal of Political Economy.                | Plant World.                                        |
| Journal of the Society of Chemical Industry. | Political Science Quarterly.                        |
| Journal of the U. S. Cavalry Association.    | Popular Science Monthly.                            |
| Journal of the U. S. Infantry Association.   | Power.                                              |
| Ladies' Home Journal.                        | Printing Art.                                       |
| Library Index.                               | Psychological Review.                               |
| Library Journal.                             | Publisher's Weekly.                                 |
| Literary Digest.                             | Pure Products.                                      |
| McClure's Magazine.                          | Putman's Monthly.                                   |
| Machinery.                                   | Quarterly Journal of Economics.                     |
| Magazine of History with Notes and Queries.  | Review of Reviews.                                  |
| Modern Housekeeping.                         | Scientific American.                                |
| Monist.                                      | Scientific American Supplement.                     |
| Musical Courier.                             | Scribner's Magazine.                                |
| Nation.                                      | Speaker.                                            |
|                                              | Talent.                                             |
|                                              | Transactions of the American Entomological Society. |
|                                              | United Service.                                     |
|                                              | Zoölogist.                                          |
|                                              | World's Work.                                       |

The new periodicals recommended for purchase are:

- |                     |                                    |
|---------------------|------------------------------------|
| Craftsman.          | Psychological Clinic.              |
| Current Literature. | Technical World.                   |
| Concrete.           | What's in the Magazines.           |
| Everybodys.         | American Political Science Review. |
| Independence.       | Electrical Review.                 |
| Mind and Body.      |                                    |

In addition to these purchases of additional books and periodical literature the Board of Regents have appropriated \$1000 for the purpose of recataloging and rearranging the whole library, which will be a task of no small magnitude, and which will keep the newly elected librarian, Miss Anne M. Boyd, busy for the whole College year.

### ***The Summer Course in Agriculture.***

The Board of Regents more than a year ago directed that the College Extension Department devote considerable time to the movement for having elementary agriculture introduced into the rural schools and county high schools. To that end Superintendent Miller, of the College Extension, has given much time for the past two summers in visiting the teachers' institutes, talking to the rural teachers on this subject. The idea has spread, and many of the county high schools of Kansas and city high schools also have introduced this subject into their courses of study.

Now, the call has come for trained teachers, and while the Agricultural College sends out a limited number of young men and women each year who enter the teaching work, the great problem is still for the special training of hundreds of young men and women now actively engaged in teaching in the public schools of the State. Many of these are graduates of normal schools, colleges, and universities, but have not had an opportunity to study theoretical agriculture. Many of them are excellent teachers of botany and geology and chemistry, but need some help in adapting their teachings to the needs of country pupils. The demand is great for men and women who can teach elementary agriculture as well as botany, geology, and other sciences.

To meet this demand the Board of Regents, at their last session, made definite arrangements for a six-weeks' course in the agricultural sciences for teachers. The details have not been fully worked out, but will be published during the winter. The Faculty feel certain that the course will be well attended.

### ***Iowa Wins First in the Judging Contest.***

Only two teams took part in the corn-judging contest held October 10 at the National Corn Exposition at Chicago—Iowa and Kansas. Iowa won by a margin of five points. The prizes were \$200 for first and \$100 for second. The standing of the several members of each team is as follows:

#### IOWA.

| NAMES.         | Placing. | Reasons. | Total. | Individual rank. | Score of team. |
|----------------|----------|----------|--------|------------------|----------------|
| McDonald.....  | 52.5     | 34       | 86.5   | 3                |                |
| Patterson..... | 52.6     | 35       | 87.6   | 2                |                |
| Hadley.....    | 49.8     | 32       | 81.8   | 4                |                |
| Phillips.....  | 49.2     | 31       | 80.2   | 6                |                |
| Bliss.....     | 50.0     | 27       | 77.0   | 8                | 82.62          |

#### KANSAS.

| NAMES.        | Placing. | Reasons. | Total. | Individual rank. | Score of team. |
|---------------|----------|----------|--------|------------------|----------------|
| Shelley.....  | 49.9     | 39       | 88.9   | 1                |                |
| Peterson..... | 48.8     | 32       | 80.8   | 5                |                |
| Miller.....   | 48.1     | 30       | 78.1   | 7                |                |
| Cron.....     | 48.7     | 22       | 70.7   | 9                |                |
| Praeger.....  | 48.7     | 21       | 69.7   | 10               | 77.64          |

Although the Kansas State Agricultural College team lost on the average, Mr. Shelley is to be congratulated in scoring the highest number of points, ranking first among all the judges. The Kansas team really had very little preparation for the contest, having had only about a week's practice and having handled only two of the five varieties of corn which they were obliged to place at the contest. We hope to do better at the International contest

in December, in which the States will compete for the Cook Trophy, and also for the Armour Scholarships. It is reported that the Iowa team was selected from a class of fifty and that the team had had practice work since college opened. We have some good men on our team, and with hard work and plenty of practice we will stand a good chance of winning from the Iowa team at the next contest.

### *Society Plays.*

The following rules governing dramatic presentations by the literary societies were adopted by the Faculty on October 5, 1907, following a conference with representatives of various societies:

I. The senior class shall be permitted to give a class play each year during Commencement week.

II. Only one play may be given by the literary societies singly or in colaboration.

III. The following schedule shall be the basis for reckoning the rotation of societies in giving plays:

|                             |          |
|-----------------------------|----------|
| 1. Alpha Betas, '68 .....   | 1907-'08 |
| 2. Websters, '68 .....      | 1908-'09 |
| 3. Hamiltons, '84 .....     | 1909-'10 |
| 4. Ionians, '87 .....       | 1910-'11 |
| 5. Franklins, '02 .....     | 1911-'12 |
| 6. Eurodelphians, '05 ..... | 1912-'13 |
| 7. Athenians, '07 .....     | 1913-'14 |

IV. New societies that may be organized shall be added to the list and rotate according to priority of organization.

V. The Agricultural, the Architectural, the Engineering, or any new society that may be organized for the sole purpose of discussing technical subjects, shall not devote any of their time or energy to the presentation of plays.

VI. Any two or more literary societies may colaborate in the presentation of a play, provided one of them is in regular rotation, according to the above schedule.

VII. Nothing in these rules shall be construed as prohibiting any literary society from giving a special annual program of a general literary character.

*Der Christliche Apologete* publishes a good picture of Mr. and Mrs. Saml. Weber, of Arley, Mo., the parents of Mrs. J. E. Kam-meyer, who a few days ago celebrated the sixtieth anniversary of their wedding. Mr. Weber is 83 years old and Mrs. Weber 79. Both are in fair health and apparently good for another decade of joint happiness.

### ***Local Notes.***

The new greenhouse is beginning to "loom up."

The annual Y. M. C. A. State convention will meet at Ottawa the last week of October.

Assistant William Neill was one of the judges of the Holstein dairy cows at the interstate fair at Kansas City last week.

Doctor Orr, our College photographer, has prepared a set of beautiful views of the College dairy cattle, to be sent to the Chicago stock show.

George Spohr, '06, employed in the College printing office, has severed his connection with that department and has gone to the Western Dental College, at Kansas City, to study dentistry.

Prof. Minnie Stoner, formerly of the Domestic Science Department of this College, has recently accepted the position of professor of domestic science in the University of Wyoming, located at Laramie, Wy.

The Bostonia Sextette, which opened the College lecture course season Tuesday night, was in every way a high-class entertainment. The music was of the best and the work of the different artists on the program was all good.

Supt. J. H. Miller and Dr. F. S. Schoenleber left Sunday on an institute trip which will include Norton, Phillipsburg, Smith Center, Mankato, Belleville, and several other points. This is the first of the 140 live-stock institutes to be conducted by the College this winter.

The College team was defeated at football last Saturday in the Manhattan athletic field, by the Haskell Indians. The game was a hard and fast one. The Indians scored a field goal and a touchdown and won the game by a score of 10 to 0, though our boys did well and made practically no breaks.

Last Monday night the class of 1911, numbering nearly 450 members, had their annual reception in Kedzie Hall. A musical program of a number of very fine selections was given in the Gymnasium, after which refreshments, consisting of punch and wafers, were served. The freshmen always have a good time.

The milking machine was one of the absorbing attractions at the county fair last week. This department was under the able supervision of Mr. William Neill of the State Agricultural College, who gives his best efforts to the thing at hand, and is a mighty good man for the Agricultural College. Mr. Neill, who has traveled considerable in the old country and visited many agricultural colleges and experiment stations in this country, upon being interviewed as to the relative standing of the Kansas Agricultural College, he stated, without reservation, that it stands to-day as one of the best institutions of its kind in the country, and that the moral standard of the institution is remarkably good.—*Belleville Telescope.*

The following professors and assistants take turn in conducting chapel exercises: Professor Andrews, Professor Brink, Mrs. Calvin, Professor Eyer, Professor Freeman, Professor Hamilton, Professor Headlee, Miss Mack, Professor McKeever, Mr. McLean, Mr. Meinzer, President Nichols, Professor Price, Professor Remick, Miss Rice, Miss Richards, and Professor Walters.

The papers are announcing the approaching wedding of Assistant A. D. Colliver, of the Fort Hays Branch Experiment Station, and Miss Carrie Rockefeller, a niece of John D. Rockefeller and of Mrs. Missinger, living in Manhattan. Mr. Colliver is a graduate ('05) of this College. The wedding will occur October 25. Miss Pearl Connor, a teacher in the Russell high school, will be bridesmaid, and George Phillips, of Hays City, will be best man. Mr. and Mrs. Colliver will live in Hays City.

Prof. Oscar Erf, formerly of this College, who has been traveling in Europe for the last ten weeks in the interests of dairy work, arrived in New York October 7. Mrs. Erf returned to Manhattan Monday and Mr. Erf, who remained in Chicago to attend a dairy convention, is expected home this week. As soon as the professor's work can be arranged and their household goods packed, they will leave for Columbus, Ohio, where Professor Erf will take up his work in the Ohio State University.

The Riley County Farmers' Institute will meet in Manhattan November 7 and 8, the first session beginning on Thursday morning. The speakers from the College the first day will be Supt. J. H. Miller, of the Farmers' Institute Department, and Prof. F. H. Roberts, botanist, the former speaking on the "Selection of Seed-Corn" and "Farm Management," and the latter on "Need of Better Seed." The boys' contest will be held on the first day of the session, the corn to be in place by 10 A. M. Several other speakers, including the county superintendent of schools, will be on the program for the first day's session. The second day's program will be devoted entirely to live-stock subjects, with two addresses by Prof. R. J. Kinzer, "The Farm Horse," and "Some Principles in Live-Stock Breeding." The College has arranged for some assistance in this live-stock campaign this year and the Institute Department has engaged Mr. C. M. Lewelling, of Beaver City, Neb., for several weeks' work in the institutes, and Mr. Lewelling will speak at our county institute on "Economic Pork Production," and "Poultry on the Farm." Professor Kinzer and Mr. Lewelling will be here on the second day. The sessions will begin each day at 10 A. M. sharp, and end at 4:15 sharp. The meetings are open to all, and everybody will be welcome. County superintendents everywhere are being asked to excuse boys and girls from school to attend the session on the day of the corn and other contests. All who join the farmers' institute this year, or old members paying up, will receive from the College during the year, five very valuable pamphlets on live stock, to be published and mailed in the following order: "Swine," "Farm Dairying," "Farm Poultry," "Sheep," and "The Farm Horse."

About 1000 Odd Fellows visited the Rebekah Home at Eureka Lake last Thursday. They came here on a special train from Topeka, at the close of the Grand Lodge and had a grand time for the day. The Grand Lodge appropriated \$5000 for the maintenance of the Home. The excursionists were delighted with the appearance of the Home, the beauty of its surroundings, and the care taken of the inmates. The crowd saw many things around Manhattan and the College to interest them.—*Nationalist*.

Kansas to-day has one of best institute systems in America, and the farmers and the public generally seem to be thoroughly aroused as to the influence and value of these organizations. Last year over 20,000 farmers attended the farmers' institute meetings conducted by the Kansas Agricultural College, and more than 16,000 attended the various meetings held in connection with the special "Institute Trains." This year the Institute Department of the Agricultural College is announcing several institute circuits, aggregating about 140 institutes, covering every part of the State, and the subject to be emphasized this year is "Live Stock, Hogs, Poultry, Horses, Dairy," etc., one day of each two-day session to be devoted exclusively to discussion of live-stock subjects.—*Manhattan Enterprise*.

### ***Alumni and Former Students.***

F. L. Bates, '04, is continuing his studies in the university at Ann Arbor, Mich. His address is 217 Glen Avenue.

Mamie Hassebroek, '04, has taken up work at Teachers' College, and her address is 120 West street, New York City.

Dr. Harry D. Orr, '99, was married Saturday, October 12, to Miss Helen Glanville Badenoch, Chicago, Ill. They will be at home after December 1 at 299 Hazel Avenue, Chicago.

Carl E. Mallon, '07, and Alice Southern, freshman student last year, were married Wednesday, October 16. After a short trip they will be at home in Manhattan, on east Humboldt street.

Estella M. Tharp, '01, was married September 4, at the home of her grandfather, near Winfield, to Robert S. Edwards. They will spend this year in Chicago, where Mr. Edwards is studying medicine.

Changes of address: O. M. McAninch, '02, Weskan, Kan.; Guy E. Yerkes, '06, Port Jervis, N. Y.; R. S. Thompson, '05, 1107 Monroe Avenue, Kansas City, Mo.; J. J. Johnson, '95, Porum, Ind. Ter.; W. H. Harold, '05, Clay Center, Kan.; Clara Pancake, '03, 1422 Poplar street, Philadelphia, Pa.; S. R. Tilbury, '07, Williams, Ariz.

Kirk P. Mason, '04, and Lena M. Finley, '05, were married Tuesday evening, October 15, at the residence of the bride's parents on Poyntz Avenue. Only intimate friends and relatives were present. Mr. and Mrs. Mason will be at home in Cawker City, Kan., after November 1, where Doctor Mason has been practicing since receiving the degree M. D. last spring.





*Board of Instruction (concluded).*

|                                                                  |                                           |
|------------------------------------------------------------------|-------------------------------------------|
| CLARENCE L. BARNES, D. V. M. (Cornell)                           | Asst. Professor of Veterinary Science     |
| JOHN O. HAMILTON, B. S. (Chicago)                                | Assistant Professor of Physics            |
| ANDREY A. POTTER, S. B. (Mass. Inst. Tech.)                      | Asst. Professor of Mechanical Engineering |
| ROBERT H. BROWN, B. M. (Kan. Con. of Music), B. S. (K. S. A. C.) | Asst. Professor of Music                  |
| BENJ. R. WARD, A. M. (Harvard)                                   | Assistant Professor of English            |
| GEO. A. DEAN, M. S. (K. S. A. C.)                                | Assistant Professor of Entomology         |
| GEORGE F. FREEMAN, B. S. (Ala. Polytech. Inst.)                  | Assistant Professor of Botany             |
| GEO. C. WHEELER, B. S. (K. S. A. C.)                             | Assistant Professor of Animal Husbandry   |
| WALTER E. MATHEWSON, B. S. (K. S. A. C.)                         | Assistant Professor of Chemistry          |
| WILLIAM H. ANDREWS, A. B. (Univ. of Chicago)                     | Assistant Professor of Mathematics        |
| <hr/>                                                            |                                           |
| Miss Ada Rice, B. S. (K. S. A. C.)                               | Instructor in English                     |
| Miss Ella Weeks, A. B. (U. of K.)                                | Instructor in Drawing                     |
| Miss Daisy Zeininger, B. A. (Fairmount)                          | Instructor in Mathematics                 |
| Leonard W. Goss, D. V. M. (Ohio State University)                | Instructor in Veterinary Science          |
| Robert E. Eastman, M. S. (Cornell University)                    | Instructor in Horticulture                |
| Miss Ula M. Dow, B. S. (K. S. A. C.)                             | Instructor in Domestic Science            |
| William L. House                                                 | Foreman of Carpenter Shop                 |
| Miss Gertrude Barnes                                             | Assistant Librarian                       |
| Louis Wabnitz                                                    | Foreman of Machine Shops                  |
| Miss Ina E. Holroyd, B. S. (K. S. A. C.)                         | Assistant in Preparatory Department       |
| Ambrose E. Ridenour, B. S. (K. S. A. C.)                         | Foreman of Foundry                        |
| Miss Emma J. Short                                               | Assistant in Preparatory Department       |
| Miss Ina Cowles, B. S. (K. S. A. C.)                             | Assistant in Domestic Art                 |
| Theo. H. Scheffer, A. M. (Cornell University)                    | Assistant in Zoölogy                      |
| Miss Kate Tinkey                                                 | Assistant Librarian                       |
| Earl N. Rodell, B. S. (K. S. A. C.)                              | Assistant in Printing                     |
| Roy A. Seaton, B. S. (K. S. A. C.)                               | Assistant in Mechanical Engineering       |
| M. Francis Ahearn, B. S. (Mass. Ag. College)                     | Assistant in Horticulture                 |
| Miss Gertrude Stump, B. S. (K. S. A. C.)                         | Assistant in Domestic Art                 |
| M. Sheldon Brandt, Ph. B. (Yale)                                 | Assistant in Architecture and Drawing     |
| Heman A. Wood, B. S. (Olivet)                                    | Assistant in Chemistry                    |
| Chas. Yost                                                       | Assistant in Heat and Power Department    |
| Earle B. Millard                                                 | Foreman of Blacksmithing                  |
| J. T. Parker                                                     | Assistant in Woodwork                     |
| J. D. Magee, A. M. (Chicago)                                     | Assistant in Mathematics                  |
| E. G. Meinzer, A. B. (Beloit)                                    | Assistant in German                       |
| Miss Florence S. Latimer, B. M. (Ferry Hall Seminary)            | Assistant in Music                        |
| Miss Marjorie Russell (Mechanics' Institute)                     | Assistant in Domestic Science             |
| Herbert F. Bergman, B. S. (K. S. A. C.)                          | Assistant in Botany                       |
| Burton Rogers, D. V. M. (Iowa State College)                     | Assistant in Veterinary Science           |
| Miss Clara Willis (Framingham Normal)                            | Assistant in Domestic Science             |
| C. O. Swanson, M. Agr. (Minn.)                                   | Assistant Chemist, Experiment Station     |
| Herbert H. King, M. A. (Ewing College)                           | Assistant in Chemistry                    |
| Edw. C. Crowley, Ph. B. (Yale)                                   | Assistant in Chemistry                    |
| Hugh Oliver                                                      | Assistant in Heat and Power Department    |
| Miss Charlaïne Furley, B. A. (Fairmount)                         | Assistant in Preparatory Department       |
| Miss Jessie Reynolds, A. B. (K. U.)                              | Assistant in Preparatory Department       |
| David M. Wilson, D. S. (Ont. Agr. College)                       | Assistant in Dairy Husbandry              |
| Leland E. Call, B. S. (Ohio State University)                    | Assistant in Agronomy                     |
| Miss Mary F. Nesbit, A. B. (Illinois University)                 | Assistant in Mathematics                  |
| Miss Annette Leonard, A. B. (K. U.)                              | Assistant in English                      |
| William C. Lane, B. S. (K. S. A. C.)                             | Assistant in Physics                      |
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| G. A. Porteous                                                   | Herdsman                                  |
| Wm. A. Lamb                                                      | Poultryman                                |
| Floyd Howard                                                     | Farm Foreman                              |
| William R. Lewis                                                 | Custodian                                 |

# THE INDUSTRIALIST

Historical Society

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The Industrialist.

PRES. E. R. NICHOLS..... Editor-in-Chief
 PROF. J. D. WALTERS..... Local Editor
 PROF. J. T. WILLARD..... Alumni Editor

TERMS AND VACATIONS.

FALL TERM, 1907, THIRTEEN WEEKS.

Saturday, November 2..... Mid-term examination
 Thursday, November 28..... Thanksgiving Day vacation
 Thursday and Friday, December 19, 20..... Examination at close of term

WINTER TERM, 1908, TWELVE WEEKS.

Monday, January 6..... Examination for admission, at nine A.M.
 Tuesday, January 7..... Winter term begins
 Tuesday, January 7..... Short courses in agriculture and dairying begin
 Saturday, January 25..... Annual intersociety oratorical contest
 Saturday, February 15..... Mid-term examination
 Thursday, March 19..... Annual concert
 Thursday and Friday, March 26, 27..... Examination at close of term

SPRING TERM, 1908, ELEVEN WEEKS.

Monday, March 30..... Examination for admission, at nine A.M.
 Tuesday, March 31..... Spring term begins
 Saturday, May 9..... Mid-term examination
 Tuesday, May 19..... Beginning of summer course in domestic science
 Tuesday and Wednesday, June 16, 17..... Examination at close of year
 June 14 to 18..... Exercises of Commencement week
 Thursday, June 18, at ten A.M..... Commencement
 June 19 to September 16..... Summer vacation

FALL TERM, 1908,

Wednesday, September 16..... Examination for admission, at nine A.M.
 Thursday, September 17..... College year begins

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(Board of Instruction concluded on last page.)

THE INDUSTRIALIST.

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No. 6

Two Insect Carriers of Disease.

The past ten years has seen the solution of some of the knottiest problems in the relation of insects to human disease. Among these solutions none have had a wider bearing than the discovery that certain spotted-winged mosquitoes, known to science as *Anopheles*, are the disseminators of malarial fever, and that the common house-fly, *Musca domestica*, plays a deadly role as a carrier of typhoid fever. The story of patient and painstaking effort by which the world became possessed of this priceless knowledge reads like fiction, but these truths are now being incorporated into our modern life.

The malarial mosquito finds any part of Kansas a congenial home, provided suitable pools for breeding and blood for sucking may be had in reasonable abundance. To the practised eye the spotted wings and the peculiar acrobatic attitude—hind legs in the air, apparently fairly standing on her head to get her fill of blood—are quite enough to show that the person attacked is in danger of getting a hypodermic injection of mosquito saliva which may contain malarial-fever parasites. The wrigglers, too, are different from others, for when seeking air they lie parallel to the surface of the water while other sorts lie obliquely to it.

The mosquito winters over in cellars and outhouses and in late spring fares forth in search of food, for blood is necessary before she can mature and deposit her eggs. From these eggs come the curious wrigglers which later turn into spotted-winged adults.

Beginning in the spring and completing a generation in from fourteen to twenty-four days, the malarial mosquitoes continue generation after generation until stopped by the approach of winter. All summer long the females industriously seek the blood of their victims, and incidentally spread malarial fever from person to person.

When the malarial germ is sucked with blood into the mosquito's stomach, some of the parasites break up into rapidly moving thread-like creatures which soon fuse with other non-

moving parasites of the same species and the resulting cells make their way into the stomach wall, coming to rest just inside its thin outer covering. Here these cells grow in size and the protoplasm becomes divided into large numbers of thread-like bodies. The cell wall and overlying membrane then burst and these thread-like bodies float out into the blood, in which they are carried to the salivary glands, where they collect. Penetrating the outlet of the gland they are discharged with the saliva into the body of the animal bitten by this mosquito.

The germs lose no time when they enter the warm blood, but affixing themselves to the red corpuscles they penetrate their substance and increase in size. The contents of each cell then becomes divided up into many smaller cell-like bodies which, when the old cell wall bursts, float away to parasitize vastly larger numbers of other red corpuscles. Thus they continue to increase until the sufferer takes treatment.

To escape malaria the breeding places of the malarial mosquito must be destroyed. A quiet pool without fish, a marsh, an uncovered cistern or a rain-barrel may be sufficient to furnish enough mosquitoes to infect an entire neighborhood. Marshes should be drained or their surfaces covered with a film of oil, pools stocked with fish or treated like the marshes, cisterns and rain-barrels covered or screened. Individuals, towns and cities have undertaken this work with great resulting good.

The second culprit, the house-fly, has in times past been considered a nuisance, but of recent years it also has become known as a carrier of one of the most common serious diseases, so we should be no longer content to drive it from our dining tables only to permit it in our kitchens. The terrible epidemic of typhoid at Chickamauga park was partly due to the house-fly.

Typhoid is a disease of the intestine, and the excreta of the patient are full of the germs. House-flies are attracted to such substances and, under favorable conditions, will even breed in them. In either case the insect will fly, reeking with foulness, into the house and crawl over exposed food-stuffs, thus preparing infection for those who may eat them without further cooking. Even if the flies have opportunity for no typhoid infection, they get into all manner of filth, and their crawling over exposed food contaminates it.

To avoid these dangers the typhoid-infected material must be kept covered with earth or chloride of lime or, in a city, thrown directly into a sewer, and the house-fly must be destroyed.

Disposing of infected material is so easy of accomplishment

that no explanation is needed, nor is it difficult to get rid of the flies when we understand that they breed principally in horse manure. When we realize that the enormous number of 1200 house-flies has been known to come from a single pound of such manure, and that in ten days the freshly laid egg may develop into an adult, it is not hard to understand how one stable horse may furnish a whole neighborhood with swarms of flies.

Careful experiments have shown that the most efficient way to prevent flies breeding is to build a tight closet of matched boards, either inside the barn or just outside of it, with an opening guarded by a close-fitting trap-door through which the manure can be thrown, and also having a door opening outside through which the manure can be taken as needed for fertilizing purposes. Chloride of lime kept in a near-by barrel from which some can be easily sprinkled on the newly introduced manure completes the arrangement. Very few flies will enter this closet, and practically none will be able to reproduce in it.

Thus it will be seen that care and judgment, coupled with the expenditure of a small sum of money, are all that is needed to insure our freedom from malarial fever, while the danger of typhoid will be greatly lessened. Is not this a royal return for the small outlay required?

T. J. HEADLEE.

Criticism and Answer.

The following letters appeared in the Hutchinson *Independent*. They are self-explanatory:

Mr. J. T. Yerkes, florist gardner of this city, thinks the State of Kansas is making some mistake in not teaching the students at the State Agricultural College at Manhattan some of the things they need to know about gardening and flower culture. He says they teach farming in the larger sense, and dairying, and is not inclined to criticise what they do teach as much as what they do not teach. He believes gardening and floriculture to be important, and thinks the State should recognize it as such. Mr. Yerkes has sent several of his children to the College, but says that they do not receive instruction practical in the lines mentioned. To call attention to this matter, which he deemed a lack in the Agricultural College, he sends the following letter to the *Independent*:

I wish to call attention to the showing that our so-called Agricultural College made in garden products at our State fair. It was an object-lesson that should not have been passed in silence,

as you did the blunder of some indifferent individual who had gathered up a lot of shabby stuff and placed it on exhibition. While it is very likely that this exhibit was the work of some of the younger students, and no fault should be found with them for their trying to show what the College is doing in the garden, yet it showed how utterly neglected is this branch of agriculture at our Agricultural College. It looks very probable that there is no instructor there who could make a good living in the garden business. Then, we have heard that they grow flowers, but not a rose nor a flower of any kind, not even a foliage plant, did they exhibit to show how they delve in the beauties of nature. Most likely their florist was so busy coaching their football team that it was impossible to show what they are doing in floriculture.

Anyhow it is a great institution, and if we could induce our legislature to order a dash through the "agriculture" in the printed matter of the College and the word "industrial" stamped above it, then few farmers or gardeners would be misled in sending their children to learn agriculture.

J. T. YERKES.

Mr. W. E. Blackburn, editor of the *Anthony Republican*, has written a letter to the *Independent*, in answer to an article which we published at the close of the fair, in regard to the exhibit made at the fair by the Kansas State Agricultural College. The article referred to was from the pen of Mr. J. T. Yerkes, of this city. The letter from Mr. Blackburn is printed in full herewith:

Editor Independent, Hutchinson, Kan.:

DEAR SIR.—In a recent issue of your paper I noted a criticism of the exhibit made by the Kansas State Agricultural College at your magnificent fair which impressed me as being both unjust and unfair. I have seen no reply to it, and believing that some answer should be made I write you confident that it was not your intention to present your many readers with anything but facts.

In passing on the exhibit made, there must necessarily be a difference of opinion. The writer made the trip to Hutchinson especially to see the showing and compare it critically with other exhibits made by local growers. There were fine exhibits made by local men and many individual showings made which excelled in size garden products exhibited by the College, but when the value of the exhibits in an educational way is considered, nothing shown compared with the College entries.

The College showing covered all products of farm and garden,

was classified exactly and grouped according to the classification, affording means of comparative study. The specimens were not freaks, grown for the purpose of exhibition, but were shapely, well matured and typical specimens which are possible for every painstaking gardener or farmer to grow, and which sell readily, bringing the best returns per acre on the market. The practical nature of the exhibit and its educational value was a matter of comment by many with whom we talked while looking over the showing; in talking with a dozen or more people on the grounds and since the fair we have heard nothing but highest praise for the splendid showing made by the College in vegetables and in the large collection of grapes, for the production of which the sand-hill country north of Hutchinson is especially well adapted.

Your correspondent criticised the exhibit for its lack of flowers. This is not well taken, for the reason that flowers are grown during the summer when the College is in vacation. A showing could have been made ordinarily of potted plants from the greenhouses but for the fact that the old College greenhouse is a ruin and the new one is under construction.

For one who has had children in the College, your correspondent is singularly misinformed concerning the institution and its work. He complains because the culture of flowers and gardening is not taught. The College has on its teaching staff the first authorities in the West on these subjects, and the course of study in agriculture requires botany, pomology, plant diseases, forestry, plant morphology, ornamental gardening, plant breeding, soil physics, and bacteriology. Even the domestic science course for girls requires botany, which includes the propagation of plants, plant morphology, vegetable gardening, and bacteriology. No institution in the West gives us such comprehensive and exhaustive consideration of the world's knowledge of such value to the flower grower, the gardener or the farmer, as the Kansas State Agricultural College, which has contributed so largely to the interest and success of the wonderful Hutchinson fair.

It is in touch with the most advanced ideas in the world of knowledge beneficial to those who make their living from the soil, and brings it to the students of the College who wish it.

Study of its catalogue, or, better yet, a visit to the immense institution of which the State is so proud and which has done and is doing so much for agricultural interests in the State, would effectually prevent such ill-considered criticisms being written or printed.

Very truly,

W. E. BLACKBURN.

Professor Webster Will Remain at Washington.

When the Regents of the Kansas Agricultural College a few days ago offered the chair of dairy husbandry to Ed. H. Webster, chief of the dairy division of the U. S. Department of Agriculture, everybody interested in dairy work in Kansas was pleased at the prospect of the return of this graduate of the College to his alma mater. On many accounts Mr. Webster would have found the resumption of residence in Kansas desirable. He knows well the work to which he was called, having been an assistant in that department after his graduation.

Perhaps if the determination had been left solely to Mr. Webster and his Kansas friends his decision would have been to return. But the dairy interests of the United States are great, and are represented by some of the ablest men. These raised their voices in protest against the proposition to take Mr. Webster out of the National work. This, together with the fact that he has started several lines of important work at Washington turned the scales against the proposed change.

The fact that, while holding a \$2500 position, this young man is urged to take another at about the same money should be an added incentive to every boy in College to persist in good work. The lesson would be even more impressive could it be known that Ed. Webster met and overcame as many discouragements as fall to the lot of a Kansas youth in quest of an education.—*Kansas Farmer*.

The State Dairy Commissioner.

The *Kansas Farmer* publishes a half-tone of the newly elected State dairy commissioner, Prof. J. C. Kendall, and speaks of his work at the North Carolina Experiment Station in most complimentary terms. The *Farmer* says: "Professor Kendall bears an enviable reputation for good work, and his equipment in special training, energy, and ability is said to be of the very highest order. His life has been spent in close touch with practical dairying, and circumstances have been such as to permit him to gather quite a variety of information and experience along dairy lines, in different parts of the country. He spent the greater part of his life on a New Hampshire dairy farm and in creamery work. He is a graduate of the New Hampshire Agricultural College, has been a student in dairy manufacturing and dairy bacteriology at the Ohio State University, and has traveled extensively in making a study of the dairy industry. Professor Kendall has made a better record in dairy work than any other man in the South.

He had charge of all of the instruction in dairying in the College, all of the experimental work in the station, and the dairy development work in the State. As a result, he stimulated interest throughout North Carolina and neighboring states. He organized local dairy associations in nearly all of the cities of North Carolina and most of the dairy farmers of the state into a State Dairymen's Association, and local dairy associations. So, as a result of his work in North Carolina, the dairy industry there has been advanced."

Some Things the Agricultural College is Doing.

A statement published by the Agricultural College of its propaganda work, done outside of the class room, will be a surprise to many Kansas people. It is known that the College has nearly 2000 students, but its outside work in behalf of better methods of farming, better seed and cultivation and selection of crops is more extensive than many people suppose. It appears that in addition to talking directly in institute meetings organized by the College in the last two years to more than 80,000 farmers, the College has sent its special bulletins to more than 20,000 farmers regularly and answers letters from farmers on agricultural questions sometimes running over one hundred a day. The College and Experiment Station are, in short, in direct contact with the farmers of the State.

In its statement the College says that if it can increase the average wheat yield one bushel to the acre and the corn yield two bushels, it will add eight million dollars to the average crop values from the thirteen million acres devoted to corn and wheat. This is equivalent to adding to the value of all the farm land in the State from \$6 to \$10 an acre, or to the total wealth of the State somewhere around three hundred million dollars. The College and Experiment Station experts do not hesitate to say that the application of the principles established by study of plants and soil and experiments with seed will increase the yield, one year with another, by a greater amount than that named. Many farmers realize that to apply the scientific methods means to put hundreds of millions of dollars on to the selling price of Kansas farm land.

Such work by the College and its Experiment Station entitles it to liberal support by the legislature, and there is a disposition in the legislature to give it every encouragement. There are larger agricultural colleges in the country, but none that is getting more closely in touch with the farmers or making itself more directly useful.—*Topeka Capital.*

Local Notes.

The mid-term examinations will be held on Saturday, November 2.

President Nichols will attend a special meeting of the State Board of Education, at Topeka on Monday.

Regent Story, President Nichols and Director Burkett attended the Royal Stock Show at Kansas City last week.

Professor Valley is drilling a chorus of fifty voices every Friday noon in chorus music for the Saturday chapel exercises.

The county commissioners of Riley county have recently decided to pay a bounty of ten cents for gopher scalps. Now, get them, boys.

Assistant Theodore H. Scheffer is on the program of the State Teachers' Association for an address on "Biology Illustrated" and a discussion on "Botany."

Chas. Peterson, the new fireman at the heating plant, has arrived and commenced work. He has moved into the Hofer house, east of the old Y. M. C. A. building.

The Farmers proved too much for the Kansas City Veterinarians last Saturday afternoon in the Manhattan athletic field. The score stood 33 to 0 in favor of our boys.

Professor TenEyck's brother and family arrived here last week with the intention of making Manhattan their future home. They will occupy the Good cottage, on Juliette Avenue.

Henry W. Brinkman, '07, practicing architect at Emporia, Kan., visited College last Wednesday. He looks considerably sunburnt and reports plenty of architectural work in his city. He is evidently prosperous.

Fielding & Sons, of Manhattan, selected ten ears of corn of their own raising out of the display window of their seed store, sent them to the National Corn Exposition at Chicago and received a ten-dollar cash prize therefor.

The two new students who enrolled October 15 made the enrolment to date an even 1650. On this date last year the enrolment was an even 1350. Only 300 gain. October 7 two years ago the enrolment was 1173. Gain, fifty per cent.—*Nationalist*.

Ex-Regent Wm. Hunter, of Blue Rapids, was a welcome visitor last Tuesday and Wednesday. He came here in the interest of the Electric Plaster Company, of his city, of which he is the president. He reports his business and his city "on the boom."

Dr. A. H. Hepler came in from Wilsey, Kan., Wednesday, where he has been for several weeks attending to the practice of his brother. Doctor Hepler informs a *Signal* reporter that he will move to Wilsey and take up the practice of medicine with his brother, going into partnership.—*Alma Signal*.

October 30, in the Agricultural College stock-judging pavillion, Grant Chapin, of Green, will have a sale of fifty Duroc-Jerseys. Thirty boars and twenty gilts are listed in a catalogue, which will be mailed to those writing for information. Colonel Brady and two other auctioneers will make the sale.

First Lieut. Charles H. Boice, of the 7th U. S. Cavalry, stationed at Fort Riley, was at the College last Saturday to look over the institution and its Military Department. The lieutenant may become a candidate for detail as professor of military science. Under present orders, the detail will be for three years, while formerly it was for two years only.

Professor Kinzer, who acted as judge on Angus cattle at the Kansas City Royal Stock Show, reports that the exhibition of stock was the best that Kansas City ever had. The Animal Husbandry Department of this College won \$325 in cash prices on their cattle and hogs. They won three firsts, one second and three fourths on cattle, and one first and two seconds on hogs.

Professor Eyer was called out by the students after chapel last Tuesday morning and at once proceeded to respond with "remarks" about the latest addition to the Eyer family. He predicted that in about fifteen years the youngster would become a valuable member of the College rooters' club and stated that the voice of the little fellow was of good timber and carrying quality.

Professor Frank Waugh, of Amherst (Mass.) Agricultural College, writes to Professor Walters: "Wir haben letzte Woche hier eine Kansas Versammlung gehabt. Professor Dickens hat uns einen Besuch gemacht und es waren unser fünf von Manhattan beisamen, namlich Fred und Ruth Sears ('92), Professor Dickens ('93), Frau Waugh ('92), und Ihr ergebener Freund Frank. Wir hatten wirklich eine schone Zeit."

Arthur H. Helder, who is taking a postgraduate course in studies pertaining to landscape gardening and landscape architecture, is working on the problem of "Future Extensions of the College Campus." The work involves the location of an athletic field, the construction of an ornamental grand stand, the building of ornamental entrances to the College grounds, etc. Mr. Helder has worked in Kansas City under the renowned landscape architect Kessler for over a year and is enthusiastic for this line of work.

The new Domestic Science Hall is growing rapidly these fine October days. The walls of the south wing are completed to the upper floor and are receiving the floor beams. The east wing is not quite that far along, but Contractor Walter Stingley says that he will have the whole of the stone work of the main story completed by the end of the month. There are fourteen stone-cutters, nine masons, four foremen, six teamsters and a whole army of laborers at work on the building. If the weather will permit constant work, the roof will go on after the first of January, and the windows and doors will be in place by March first.

Mr. William Neill, with the milking machine from the State Agricultural College during fair week, did much to encourage dairying in this vicinity and advised farmers to go into the business. He made a statement that Kansas is an ideal state for dairy cows, for the reason that the climatic conditions are the best and all that can be asked for plenty of good pasture, good water, with abundance of sunshine. He also advised parents to send their children to the College. He told of the splendid work done at the College, and evidently left a good impression on the minds of the parents.—*Republic County Democrat*.

Last spring the Faculty appointed a committee consisting of Professors Brink, Kammeyer and Valley to edit a new chapel song book. The old book, also edited and printed by the College, had been in service for probably fifteen years and had been used by thousands of students; but it was felt that a new book giving a greater variety of songs and containing the accepted national airs and some songs for special occasions was needed, and none of the existing "College Songsters" seemed to answer our purpose entirely. The committee has progressed nicely and President Nichols hopes to get the book completed by the beginning of the winter term.

Last Wednesday Contractor Walter Stingley, of the new Domestic Science Hall, had an accident that might have become fatal to him and several workmen. He was engaged in hoisting a large pilaster of one of the main entrances of the building. The stone measures over ten feet in length and about two feet in thickness and width, and must weigh considerably over 5000 pounds. In order to hoist it without damaging its finish it was provided with two iron anchors that were sunk into its end. When the stone approached its moorings the anchors pulled out and the stone fell to the ground, a distance of about six feet, breaking some boards and sustaining several abrasions. The mechanics were considerably scared, but went right to work again and with new tackle placed the pilaster where we hope it will remain for a dozen generations.

A general improvement in the excellence of the animals shown at the Kansas City Royal Stock Show was observable to those who have attended successive exhibitions. The contests were in many instances so close that the judges called in help to determine the placing of the awards. A notable case of this kind occurred in the fed-steer contest. The honors lay between the Kansas Agricultural College and the Nebraska Agricultural College. The two judges disagreed and called in a third. A most thorough inspection of the two representative animals was had. The judges deliberated and finally tied the blue ribbon on the Kansas steer. This is added triumph for Professor Kinzer, who seems to succeed equally well in training young men in the art of feeding, in teaching them to judge the merits of results attained, and in the various other duties of the professor of animal husbandry in the Kansas College.—*Kansas Farmer*.

To-day, Saturday, occurs the football game between the Farmers and the Jayhawkers—the great annual test of push and grit of the select men of the two State institutions. The College beat the University last year and we believe that we can beat them again, but it will be a hard-fought battle and it will not be wise to be too certain. It was planned at first to arrange for a rooters' club excursion to Lawrence, and if a dollar rate could have been secured there would have been a full trainload of club members on the grand stand in the University field, but the railroads declined to make the desired arrangements. This made the round trip \$3.20—too high for the slender purses of most of our students.

Last week the Agricultural College sent out Prof. Thos. J. Headlee for an inspection of the condition of the western wheat fields with regard to destructive insects and he, together with Warren Knaus, of McPherson, an M. S. of this College, has spent the week examining the fields and growing crops in different parts of the State. They report that they cannot discover the existence of the green bug or Hessian fly, but have discovered quite a number of chinch-bugs sufficient in number to cause a great deal of damage should the meteorological conditions be favorable for their development. Special work was done at the Hays Experiment Station farm. The chinch-bugs were found in the old straw about the farm, where they hibernate until spring, and with favorable weather in the spring they will increase in great numbers. Professor Headlee advises the farmers over the country to burn the old straw and trash about their farms.

Prof. Walter E. King, M. S., the newly elected head of the Department of Bacteriology of this College, was born at Kinsan, Ohio, and received his elementary education in the school and high school of that place. He then entered Wabash College, at Crawfordsville, Ind., and graduated there in 1900 with the degree of A. B. In the years 1901 and '02 he was instructor of botany and zoölogy in the Crawfordsville high school, at the same time doing clinical bacteriological work for the city board of health. From 1903 to 1905 he was assistant in bacteriology in Cornell University, and completed the first two years of the medical course in Cornell Medical College, receiving, in 1905, the degree of M. A. At this university he was elected a member to Sigma X:, Honorary Scientific Fraternity. He then became research bacteriologist for the Parke, Davis & Co., manufacturing chemists and producers of serums, antitoxins and biological products, in which position he worked till his election in September of the present year to the chair of bacteriology of this College. Among the publications of the professor we may name: "The Bacterial Flora of the Intestinal Mucosa of the Common Fowl." "The Nuclear Structure of the Bacterial Cell." "Germicidal Action of Potassium Permanganate." "The Oral Administration of Diphtheria and Tetanus Antitoxin," "A Simplified Method of Diagnosing Glanders by Agglutination." Professor King comes to us with very fine recommendations, and we are certain of his success in the important chair to which he was elected.

Alumni and Former Students.

W. F. Wheeler, student in 1903, and who later nearly completed a course leading to graduation from the University of Kansas, is now at the University of Illinois and showing himself to be a man of unusual ability and resource.

F. W. Christensen, '00, is earning and receiving the commendation of his superiors for his industrious and intelligent assistance in the animal nutrition experiments with cattle in the respiration calorimeter at State College, Pa.

Helena Pincomb, '01, holds a fellowship in household science in the University of Illinois. She is studying some branches of household science, and in the quantitative laboratory of the chemical department is learning how difficult it is to keep the fleet molecules from escaping.

W. B. Gernert, '07, who finished the agriculture course at the end of the winter term, is now doing graduate work in soil physics and plant breeding in the University of Illinois. He spent the spring and summer in field work of the soil survey conducted by Doctor Hopkins, of the University. Mr. Gernert's associates speak of him in terms of high commendation.

E. E. Greenough, '06, and May Doane, '04, were married, October 15, at the home of the bride on College Hill. Among the relatives from out of town were the bride's brothers, L. A. Doane, '04, Roswell, N. M., and Walter Doane, recently from Cuba. Mr. and Mrs. Greenough have gone to Rocky Ford, Colo., where Mr. Greenough is employed on a dairy farm.

On Sunday morning, October 20, W. W. Stanfield, '05, was married to H. Beulah Pittman, short course '07, at the home of the bride's parents in Manhattan. The ceremony was performed by Rev. A. W. Atkinson, in the presence of intimate friends and relatives. Mr. and Mrs. Stanfield will visit relatives for a short time and after November 15 will be at home at "The Highlands," near Chanute, Kan.

Changes of address: L. V. White, '03, Delphos, Kan.; C. P. King, '98, Eubanks, Okla.; Helena M. Pincomb, '01, 1003 North Oregon, Urbana, Ill.; Wilhelmina Spohr, '97, 10 Willow Avenue, Calumet, Mich.; Flora M. Hull, '07, 623 Jackson street, Topeka, Kan.; Grace (Enfield) Wood, '05, Altamont, Kan.; A. J. Cowles, '07, 5001 Linden street, Station H, Cincinnati, O.; O. N. Blair, '04, 325 Twelfth street, Portland, Ore.; Clara Barnhisel, '04, Newton, Kan.; F. E. Johnson, '99, Lincoln, Neb.

The alumni editor has been taking a vacation of ten days or so following the meeting of the Association of Official Agricultural Chemists at the Jamestown Exposition. Nothing in many years has done him so much good as the glad hands, bright smiles and kind words received from his former students now in Washington, D. C., State College, Pa., Chicago, Ill., Columbus, O., and Urbana, Ill. Such experiences are the richest rewards of the teacher and do much to reconcile him to things not so pleasant.

Program of the Farmers' Institute.

Manhattan, Thursday and Friday, Nov. 7-8, 1907.

Thursday Morning.

- 9:10. Placing Exhibits.
 10:00. Reports of Contestants,
 10:30. More Corn from Fewer Acres:
 1. "Increasing Fertility,".....S. A. Black.
 2. "Better Preparation of the Ground,"...J. Brenner.
 3. "Cultivation of Corn,".....Mr. Munger.
 4. "Selection of Seed,".....J. H. Miller.
 Discussions.

Thursday Afternoon.

- 1:30. "Curing and Storing Alfalfa,".....R. Yenawine.
 Discussion.
 2:00. "Need of Purer and Better Seed,"....Professor Roberts.
 3:00. "Consolidation of the Rural Schools,"..Miss H. Wetzig.
 3:45. —————

Friday Morning.

- 10:00. "The Truancy Law and the Farmer,".... Wm. Fryhofer.
 10:30. "The Farm Horse Problem,"..... Professor Kinzer.
 11:15. "Economical Pork Production,"..... C. H. Lewelling.

Friday Afternoon.

- 1:00. Business Meeting.
 1:30. "Farm Dairying,"..... Alfred Docking.
 2:00. "Some Principles of Live Stock Breeding,"
 Professor Kinzer.
 3:00. "Poultry on the Farm,".....C. H. Lewelling
 4:15. Adjournment.

Special Prizes for Corn Not in Contest.

- Yellow corn—First, \$1.00; second, 50 cents.
 White corn—First, \$1.00; second, 50 cents.
 Mixed and Red corn—First, \$1.00; second, 50 cents.

NOTE.—Contestants not present at Institute can send their samples by express at the expense of the Institute, to be returned, if requested, at their expense. All must abide by the rules and regulations as outlined in the instructions sent out by Superintendent Miller. Express the corn so it will be available not later than November 6, addressing L. S. Fry, president, Manhattan, Kan.

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# The Industrialist.

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PROF. J. D. WALTERS..... Local Editor  
PROF. J. T. WILLARD..... Alumni Editor

## TERMS AND VACATIONS.

### FALL TERM, 1907, THIRTEEN WEEKS.

Saturday, November 2..... Mid-term examination  
Thursday, November 28..... Thanksgiving Day vacation  
Thursday and Friday, December 19, 20..... Examination at close of term

### WINTER TERM, 1908, TWELVE WEEKS.

Monday, January 6..... Examination for admission, at nine A. M.  
Tuesday, January 7..... Winter term begins  
Tuesday, January 7..... Short courses in agriculture and dairying begin  
Saturday, January 25..... Annual intersociety oratorical contest  
Saturday, February 15..... Mid-term examination  
Thursday, March 19..... Annual concert  
Thursday and Friday, March 26, 27..... Examination at close of term

### SPRING TERM, 1908, ELEVEN WEEKS.

Monday, March 30..... Examination for admission, at nine A. M.  
Tuesday, March 31..... Spring term begins  
Saturday, May 9..... Mid-term examination  
Tuesday, May 19..... Beginning of summer course in domestic science  
Tuesday and Wednesday, June 16, 17..... Examination at close of year  
June 14 to 18..... Exercises of Commencement week  
Thursday, June 18, at ten A. M..... Commencement  
June 19 to September 16..... Summer vacation

### FALL TERM, 1908,

Wednesday, September 16..... Examination for admission, at nine A. M.  
Thursday, September 17..... College year begins

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(Board of Instruction concluded on last page.)

# THE INDUSTRIALIST.

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No. 7

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## *New Uses For Cement.*

Cement is evidently destined to become the building material of the future. It is rapidly displacing lime in all building operations; it is taking the place of heavy ashlar stone in the construction of bridge piers and whole bridges; it is crowding stone and brick out of cellar and foundation walls; it is pushing brick and asphalt off the sidewalk; it is being used to build houses, factory chimneys, culverts, watering troughs, pipe lines, sewers, and an endless number of similar structures. The manufacture of cement is fast becoming one of the most important industries in the United States. The demand for it is outmeasuring all anticipation, and mills can hardly be built fast enough to supply the need. The production of Portland cement in the United States during the year was 45,610,822 barrels, showing an increase of 438 per cent over the output of 1900, and about 26 per cent over the previous year, 1905.

Portland cement will ultimately solve the problem of a substitute for timber. Experiments made in this country, and especially in Germany, have proved the feasibility of using cement foundations in place of the wooden sleepers in railroads. The Swiss government, too, has made extensive experiments with the view of substituting the present railroad tie by cement blocks, and the reports show that the substitution will be practical. When once in place such substructure work will be almost everlasting. In this country the need of a new material for railroad track work has not been so imperative as yet, but we are rapidly coming to it, and many of the large railroad companies are investigating the possibility of building cement foundations under their steel rails.

On the western plains the question of getting substantial fence posts has lead to the use of cement posts formed of a rich cement and sand mortar, cast into a suitable mould. Some of the manufacturers are reinforcing the posts by inserting one or more strands of twisted barb-wire. The writer of this has used similarly made hitching posts in front of his residence for many years.

The posts were made in Manhattan. Dellwood Park, a large pleasure resort near Chicago, is fenced with such posts. A thousand of these posts are nine feet long and the remainder seven feet. They are 4x4 inches in cross-section at the top and 4x6 inches at the base, and are made of one part Portland cement and two parts of stone screenings, similar to our Joplin grit. Each post is reinforced with four one-fourth-inch corrugated iron bars, one in each corner. Two men were engaged in making the posts and could produce about forty a day. The working platform was large enough to hold eighty forms, or two days products. In casting a post, a layer of concrete would be placed in a form, then two reinforcement rods were placed, followed by the second layer of concrete, the other two rods and then the balance of the concrete, all extra wet and well tamped into place. The forms were stripped twenty-four hours after the posts were cast, the latter being kept wet the meanwhile. The posts were left on the planks on the platform an additional twenty-four hours, and were then removed while still lying on planks. For three weeks after they were made they were kept wet, and for the first week of that time they were kept covered. The two men in making an average of forty posts a day also mixed the concrete and moved and watered the posts. Forty forms were provided, and after being used in making 1500 posts were still in good condition. Not over three per cent were damaged or broken after they had been made, before they were set in the fence.

The writer has given the details of the manufacture of these posts in order to emphasize two points: first, the fact that a post of this kind need not be very heavy in order to do the work expected of it; and, second, the fact that all good cement work requires much moisture and considerable time. The common fault of cheap cement work is that the mortar is not sufficiently mixed, not wet enough, and that the manufactured article, be it a cement block or a piece of sidewalk, is not kept wet or moist for a period of ten to twenty days. We have no doubt that fence-post factories, if properly conducted on a sufficiently extensive scale, would be a paying investment in western Kansas, and are glad to hear that the new Portland Cement Works at Yocemento, in Ellis county, intends to take this matter up as soon as it is able to turn out cement. Other cement works will probably follow if Yocemento is successful.

At the last meeting of the Canadian Bee Keepers' Association several of its members stated that they were using Portland cement in the construction of bee-hives, and bee-hive stands, says

the *Cement and Engineering News*. These hives are made by first making a long, cotton tube and filling it with cement mortar, which will resemble a long sausage. This cement sausage is then coiled into the shape the bee-hive is to take, one layer above the other. The cement that filters through the cotton fabric being sufficient to form a perfect bond between the different layers, after hardening possesses great strength. Light rods are placed on the inside four corners, as guides to give form and shape to the hive. These hives are said to be cheaper than wood. The cement coil is about three-fourths of an inch in diameter when full of cement.

In the specifications and directions for laying vitrified brick pavements, approved in general by the National Brick Manufacturers' Association and published and distributed by the National Paving Brick Manufacturers' Association, the set prepared for the "best-known construction" contains in part the following requirements regarding the filler for the brick, with the accompanying remarks in explanation and direction:

"The filler should be composed of one part each of clean sand and Portland cement. The sand should be dry. The mixture, not exceeding one-third bushel of the sand, together with a like amount of cement, shall be placed in a box and mixed dry, until the mass assumes an even and unbroken shade. The water shall be added, forming a liquid mixture of the consistency of thin cream.

"From the time the water is applied until the last drop is removed and floated into the joints of the brick pavement, the same must be kept in constant motion. Dry, sharp sand for this mixture is necessary. The first application should be thin in order that it may flow to the depth of the joints of the bricks, thereby insuring a substantial bond, and should be kept in constant motion while being applied, otherwise the sand will settle and the mass will consist of layers of the three ingredients."

Last week the writer of this article visited the Kaw river bridge at Manhattan where the Canton (Ohio) Bridge Company was laying a cement floor. The bridge is a five-span, steel structure 550 feet long, 18 feet wide, and of usual construction. It was built many years ago, and its floors wore out so rapidly under the heavy traffic which it has to sustain that the county commissioners looked for a substitute of metal or cement. The Canton Company offered to lay a galvanized, corrugated iron floor over the steel beams of the bridge and on this floor lay a four- to five-inch cement floor, to do all of this work inside of a week, if the weather would permit, and to guarantee the whole job for a number of

years. The work was completed last week in a satisfactory manner, and the bridge will be open for its heavy traffic as soon as the cement is found to be properly crystallized.

The modern grain elevator is now being built of cement concrete, and one of the heaviest items of expense of the grain dealer, the fire insurance, has been entirely eliminated. Over twenty elevators of this kind, each of them containing from four to sixteen bins, were built in Kansas the past three or four years. A former student of this College built two of these structures last year in Marshall county, and they are giving complete satisfaction.

Another modern use of Portland cement is the cement shingle. There are many patents granted by the United States patent office on roofing material of cement. The Department of Architecture of the Agricultural College has several makes of these shingles in its collections, and every one of them will probably make a first-class, incombustible and almost indestructible roof. In most cases the cement is mixed with asbestos or manilla fiber in order to make it tough. The shingles are light, perfectly watertight, permit nailing to the roof sheathing, and may be obtained in almost any color desired. The cost is but little above that of first-class common shingles and considerably below that of a good tin roof. The cement shingle is a new thing and has not been extensively tried under all conditions, but architects have no doubt of its wearing qualities and its practical applications for ornamental construction.

Several of the great newspapers of the West are just now engaged in an agitation against the steel truss bridge. They call it "tin bridge" and demand that the creek bridges be built of substantial stone. The writer believes that a reform in bridge construction is needed and likes to see the stone bridge substituted, but he thinks that the movement will end with the general adoption of the cement concrete bridge. The latter will be cheaper except in a few places with exceptional facilities for obtaining good building stone. It will be more durable than the other could possibly be, and it will require less time and effort in its construction. A contractor of stone bridges must find, and probably strip, a suitable rock quarry and must in most cases repair the road from the quarry to the site of the bridge before he can haul the rock; he must set up two large derricks—one in the quarry and one on the bridge site—and often move both derricks several times pending the building operations; he must have a sand bank and a "sand road." The cement contractor needs no

quarry, no derricks, no stone road and no high-priced stone-cutters. All that his work requires is plenty of first-class, coarse, clean river sand, good Portland cement and a quantity of cheap crushing rock. His machines—a rock crusher and a concrete mixer—driven by gasoline motors and always ready “set up,” together with a few cheap laborers, will do the rest and, if the mortar used has been rich enough and the job has been properly handled, the bridge will outlast any stone structure built of common Kansas limestone. Our State should be one of the first in the world to adopt this new building material for general use. We have no building timber, but plenty of excellent cement rock, plenty of first-class sand and plenty of gas and coal. Why should we not make use of these and build of cement?

One of the most difficult problems in all engineering consists in the construction of foundations in marshy or sandy subsoil. Such foundations were obtained in the past by driving oak piles from ten to fifty feet in length into the ground down to bed-rock or to a stratum of hard soil. The cities of Alexandria, Venice, Amsterdam, New Orleans and Chicago are built on such foundations. Forty-five years ago the pneumatic caisson method came into use. The caisson is simply a strongly built steel box without a bottom, but having a very strong top. This box, of the size of the base of the required pier, is gradually sunk in the river bed or bank mud by digging or pumping the earth under it through a hole and shaft in the top. As it sinks the wall is being built at the top, and when it reaches a solid stratum the interior of the caisson and the whole of the shaft is filled with cement concrete. The writer of this, when a school boy, happened to see the first attempt at using the pneumatic caisson made by bridge engineers. His father was one of the subcontractors of the railroad bridge at Buswyl, Switzerland, where this method was first employed. Of late, however, the method of driving piles has again been revived. The piles are now made of cement concrete. When wood was used, the size of the pile was conditioned by the size of the tree from which it was cut. The cement pile knows no such limitations and can be made right on the ground, thus requiring no costly transportation. By deeply fluting or corrugating the surface its friction hold is greatly increased. There are many patents granted on this process and on the many processes of reinforced bridge and building construction, and new ones are being added nearly every week.

The difficulty and danger with all new uses of cement is that the work is often done by men who do not know their business.

As with all materials put to new uses, there are many people who pose as experts on cementine construction who, in fact, know very little about it, and there are many failures in cement work, even in common cement-walk construction. Concrete work has its uses. It also has its limitations. To use it properly one should know both.

J. D. WALTERS.

### ***Kansas at the National Corn Exposition.***

The display exhibit of seed-corn by the Agronomy Department of the Kansas State Agricultural College at the National Corn Exposition at Chicago, October 5 to 19, received fourth premium, ranking above the Illinois Agricultural College exhibit and next to the exhibit of Funk Bros., the great Illinois corn breeders. The agricultural colleges of Illinois and Kansas were the only state colleges making exhibits. The Kansas exhibit attracted much favorable notice, and the Kansas Agricultural College may be congratulated on the enterprise and hard work of the Agronomy Department in making so good a showing so far away from home. The department also made several entries in classes open to the world, but failed to secure premiums, except fifth premium in the freak exhibit of "five ears in one husk." Kansas corn was usually outranked in every class by the corn of Indiana and Illinois, the premiums being won, largely, by exhibitors of those states.

The only Kansas exhibitors who won premiums in competition against the world are the Gilmans, of Leavenworth, who took several prizes in the boys' classes, as well as second and third premiums in the Kansas State exhibit of white corn, and S. G. Trent, of Hiawatha, who took ninth place with his sample of Boone County White corn in the thirty-ear class.

Kansas corn was evidently more severely injured by the unfavorable season than the corn of states further east; also the damage done by worms was a further handicap to the Kansas corn.

In the Kansas classes (competition between Kansas exhibitors only), J. G. Haney, manager of the Deming Ranch, Oswego, won first place in the yellow corn class with his Hildreth corn; Mr. Woods, of Council Grove, won first in the white corn class, and Mr. Marlatt, of Manhattan, won first in the Calico corn exhibit.

The attractive arrangement of the Agronomy Department exhibit at this exposition may be credited to Mr. E. G. Schafer, who put up the exhibit and remained in charge during the first ten days of the exposition.



*Local Notes.*

The pay-roll of the Printing Department for October is over \$600.

President Nichols was absent this week on College business in Topeka and Chicago.

The second football team expects to play the Haskell second team to-day (Saturday).

The Faculty will receive the seniors in the Women's Gymnasium on Monday evening, November 4, 1907.

Asst. and Mrs. M. F. Ahearn are now getting settled in their new home, the Jones cottage, on Laramie street.

A premium-list is being prepared for the State Corn Breeders' Association which meets here during the holidays.

Prof. Fredric A. Metcalf, at one time teacher of public speaking at this College, was a visitor "on the Hill" last Tuesday.

Charles Paddock, a junior student from Massachusetts Agricultural College, has entered College to take work in forestry.

Assistant Meinzer and his German class met Thursday evening at the home of Rev. and Mrs. D. H. Fisher, and spent a pleasant evening singing German songs.

Prof. Albert Dickens went to Mankato Friday, where he gave an address on the subject of Civic Improvement, before the Sixth District Federation of Womens' Clubs.

The rainy weather of this week has greatly retarded the progress of the three buildings now in process of erection on the campus, but it has greatly helped the wheat.

Prof. J. T. Willard returned Saturday afternoon from his trip to Washington, the Jamestown Exposition, Chicago, Urbana, Ill., and other points. While at Urbana he visited with his sister, Mrs. Obrecht.

The College second team has made arrangements to play games as follows: November 2—Haskell (2nd team)—here. November 16—Mankato High School—Mankato. November 23—K. U. (2nd team)—here. November 28 (Thanksgiving)—Wesleyan College (1st team)—Salina.

The biological museum was lately enriched by a fine specimen of the woodchuck, generally called by the ominous name of "ground-hog." The fellow will be placed in the rear corner of the zoölogy floor, where the sun never shines and where shadows are impossible in February.

Regent Taylor stopped off at the College last Friday, coming from the Fort Hays Branch Experiment Station, where he had made an inspection. On Saturday morning, at the request of Professor Walters, who presided, he addressed the students after chapel exercises. His address was well received.

Lieut. O. G. Palmer, who was with the eight troops of the Seventh Cavalry that were on the way from Fort Riley to Fort Leavenworth and camped west of the city Friday night, visited College and shook hands with Professor Walters. The lieutenant was a student at the College twenty-five years ago.

Misses Florence Richards, Ruth Elliot, Lucy Needham, Grace Smith, Bertha Schwab, Emma Irving, Nellie Baker, Eva Linn, Helen Sweet, Ethel Justin, Marie Bardshar, Marie Coons, Stella Hawkins, Kathleen Selby, Marie Lacrone, Juanita Sutcliff and Mabel McDonald returned home Monday from the Y. W. C. A. State Convention at Ottawa.

The football game with the State University last Saturday went against us by a score of 29 to 10. Our boys did well, but luck went against them. About one hundred students went down to Lawrence to root and see the game. As we had beaten the University last year in football, basket-ball and baseball, we can afford to let the Jayhawkers have the plume of a victory.

The members of the Faculty who were out on farmers' institute work this week are Doctor Schoenleber, Superintendent Miller, Professors Ten Eyck and Calvin, and Assistant Professor Wheeler. The first two, assisted by Mr. Starr and Commissioner Kendall, spoke at Hoxie, Hill City, Plainville, Natoma, Abilene, and Salina. The last three, assisted by Mr. Crabtree, conducted institutes at Independence, Erie, La Harpe, Garnett, and Ottawa.

The Ft. Scott *Daily Republican* says: "Mrs. Henrietta Calvin, of the State Agricultural College, who spoke Thursday afternoon, was heard by the largest audience of any one on the program. A large number of farmers' wives and local housekeepers were present to hear her. The domestic science class of the high school was there, pencils and note-books in hand, accompanied by their instructor, Mrs. Hepler. Mrs. Calvin speaks interestingly and convincingly."

The banks of Manhattan are so strong and so safe and have so much money on hand in the vaults that they do not believe that it will be necessary for them to adopt any restrictions whatever. All they ask is for people to go ahead and use their money when they want it in their business and the banks will see that they get plenty. The banks here want to show the State just how strong and conservative they are, and with the help of their depositors and friends they will do it.—*Manhattan Enterprise*.

The College Athletic Association, at its meeting last week, elected Professor Cortelyou general manager for the year, beginning with the close of the football season. Professor Dean, the present manager, has held the office for two years and has done a heroic amount of work for College athletics. During his term of office the association has freed itself from debt, built a bath and dressing house and a roofed grand stand at the Park. He is entitled to a rest. Professor Cortelyou has always taken much interest in athletics and will undoubtedly make an efficient manager.

A press notice from Erie, Kan., says: "The farmers of this county have closed a successful and interesting two days' session of the Neosho County Farmers' Institute. Notwithstanding the rainy weather, every part of the county was well represented. Among the speakers present were Professor Wheeler and Professor TenEyck of the State Agricultural College. One of the best features of the institute was the boys' corn-growing contest. In this contest more than \$50 was awarded in prizes to boys who succeed in growing superior corn."

Two important additions to the electrical engineering laboratory apparatus have been secured from the Westinghouse Electric Manufacturing Company—one 20 horse-power auxiliary pole motor, with variable speed central, giving speed ranges from 250 to 1000 revolutions per minute. This motor represents the latest improvement in electrical machine design. The other addition is a 2200 volt, 30-kilowatt, alternator. This is also a late type and will give the engineers a number of important experiments, such as operating in parallel two 60 cycle alternators and running the 15-kilowatt alternator as a synchronous motor.

The College Orchestra this fall term is composed of twenty-two members and is under the direction of Asst. Prof. R. H. Brown. It practices an hour every morning before chapel. The membership and the instrumentation is as follows: Violins—R. R. Hand, Geo. Bartholomees, Walter Taylor, A. W. Seng, L. L. Shaw, W. B. Honska, H. Ferguson, Madge Martin, Marcia Pierce; flute—R. M. Page; clarinets—Chas. McKirahan, Geo. Eaton; cornets—Jno. McCanles, C. Marty; trombone—Jno. McClurg, G. S. Christy; cello—H. E. Bixby; bass—G. F. Neill, R. Walthour; piano—Leon Davis; horn—Geo. May; drums—D. D. Gray. The orchestra is working on some good hard music this fall term, such as Shurbert's Symphonie in B minor, Beethoven's Overture to Egmont, and several lighter numbers by Victor Herbert and others. The Orchestra is often called upon to furnish music for College gatherings.

Many interested spectators have visited the Kaw bridge the past week to watch the laying of the cement floor which takes the place of the plank floor which was badly worn. It is expected that the bridge will be opened in ten days or two weeks. The cement needs time to harden. This is the first work of the kind done here. The cement work is supported, or rather reinforced, by corrugated steel sheets, which are laid where the planks were. The concrete, made of cement and coarse sand, is spread over this steel surface to a depth of four inches and finished up in about the same manner as a cement walk. As the bridge is 550 feet long and 18 feet wide it requires 1100 square yards of cement work. The contract for the repair of the bridge was made with the Canton Bridge Company. The cost is \$4000. While this cement floor costs more than a plank floor, it will last much longer.

—*Nationalist*.

Among the many other friends that met at the depot Saturday night to bid Captain Shaffer farewell were the cadet officers and non-commissioned staff. They met him formally, in uniform and side arms, thus showing their appreciation of what he has done for them and the College. He was presented with a fountain pen by Captain Kratzer, the senior officer present. Captain Shaffer told them of the many pleasant experiences he anticipated on his journey, and gave a brief insight into his work in the Philippines. He also said the most arduous part of his journey was leaving his friends of K. S. A. C.—*Students' Herald*.

In a past issue of the *INDUSTRIALIST* we announced that the College intends to issue a series of pamphlets constituting a simple and condensed text-book in agricultural science for the public schools. The first of these pamphlets, entitled "The Soil: With Reference to Fertility and Moisture," written by Prof. J. T. Willard, has just left the press and is being mailed to teachers of rural schools and grammar grades of town and city schools on request of the superintendent of schools. The above number contains sixteen pages of printed matter arranged under twelve heads. It is a well-printed little book and full of condensed scientific facts. The series will be issued monthly. The next number will discuss "How Plants Feed and Grow." Other subjects that will be treated are "Tree Culture," "Birds and Insects," "Hygienic Cookery," "Live Stock on the Farm," etc. Correspondence is invited relative to any and all phases of this extension work, but should be addressed to the Superintendent of College Extension and not to the authors of the pamphlets. The pamphlets are distributed free.

The last number of the College *Alumnus* publishes a somewhat rambling but very interesting and well-written letter by Darwin S. Leach, '81, who is at present down in Porto Rico and writes of his travels and experiences in that country and in Brazil, Argentine, Europe, and South Africa. Mr. Leach has evidently had varied experiences. He says: "I have been called "Colonel," "Doctor," "Professor," etc., etc. I have even been dubbed "Your Excellency." Occasionally, I have been able to live up to the part. At other times the unsatisfactory condition of my linen gave to the salutation a note of sarcasm, if not of suspicion. My health has been good. My landlord, as a rule, will see to it that I don't get the gout, and I have been too poor to have appendicitis. Some will say that such a life as I am describing is unsatisfactory. That is a matter of angles. From my point of view I would rather see London, with its great collections in the fields of art and science, its historical associations, its poverty and wretchedness; pick up diamonds in Africa; study the ruins of the Aztecs; hunt the wool-bearing deer of the Andes; or stand, as I have done, within three feet of the edge of a volcano when it was red hot and contemplate, at a distance of a thousand feet below, nature's sublimest spectacle, than settle down in some quiet village and become what is known in philosophy as a 'vegetative soul.'"

***Alumni and Former Students.***

F. E. LaShelle, '99, has been engaged by the Printing Department, and after November 11 will be employed upon its job printing.

Lieut. O. G. Palmer, '87, of the Seventh United States Cavalry, who is now stationed at Fort Riley, visited the College last week. He was with his troops on a practice march to Fort Leavenworth and back.

Carl E. Rice, '97, arrived last week from Manila, P. I., where he has spent the past nine years. He will visit four months with the home folk, before returning to his work as a civil service employee.

W. O. Lyon, '93, died of consumption at his home in Washington, D. C., Thursday, October 17. A change of climate had proved unavailing. He leaves a wife and many friends to mourn the loss of his cheerful presence.

Arthur Cranston, '90, from London, England, sends greetings through the INDUSTRIALIST to all K. S. A. C. graduates. Mr. Cranston is a long way from his home in Parsons, and is probably having the time of his life.

W. E. Mathewson, '01, left last Thursday to take up his new work in the Bureau of Chemistry, United States Department of Agriculture. He will be in the food laboratory, Manhattan Building, 315 Dearborn street, Chicago.

A. A. Sebring, fourth-year student in 1886, and who came within one study of graduating, is residing at Zion City, Ill., and working as a pattern-maker in Racine, Wis.

Thomas Haslam, junior last year, has a fellowship in the University of Kansas this year and is assisting in laboratory instruction in chemistry. Those who know his record here will not be surprised to learn that he is doing well there.

Geo. E. Hopper, '85, has the contract for the erection of the engineering building of the University of Kansas, to cost \$85,000. He began work upon it about three weeks ago. The building will be constructed of stone native to the locality, trimmed with Silverdale stone.

A. D. Colliver, '05, assistant in agriculture at the Fort Hays Branch Experiment Station, was married October 25 to Miss Carrie Rockefeller, of Russell, Kan. Mrs. Colliver is a daughter of Frank S. Rockefeller, a nephew of the noted creator of the Standard Oil Company. The young couple will reside at Hays, Kan.

Changes of address: L. A. Fitz, '02, 306 Board of Trade, Duluth, Minn.; Mary E. Hall, '04, 1061 West 31st street, Los Angeles, Cal.; C. W. Earle, '90, 825 Twentieth street, Denver, Colo.; E. W. House, '02, 554 Central Avenue, Kansas City, Kan.; R. W. Rader, '95, 213 East 7th street, Topeka, Kan.

D. G. Robertson, '86, Chicago, Ill., is prospering in his law practice, but retains sufficient agricultural interest to purchase a fine farm near Olney, Ill., 112 miles east of St. Louis, and is taking much interest in improving and stocking it.

Bertha (Bacheller) Foster, '88, is a member of the Hillcrest Farm Company, 3114 Main street, Kansas City, Mo. The company makes a specialty of furnishing pure, clean milk, not pasteurized, treated or preserved, but served in original sealed bottles. The milk is especially designed for the feeding of infants. A Walker-Gordon laboratory for the preparation of modified milk will be established later and be under the direction of Mrs. Foster.

We learn with much regret of the death of Thomas Bassler, '85, October 14, at Stillwater, Okla. Mr. Bassler was one of the founders of the Hamilton society and its first president. He was also the first to do greenhouse work at the College, a small glass-enclosed room being built against the south side of the old horticulture building and placed in his charge while a student. His many old friends will regret his early death, but as he has been in bad health for many years the event cannot come with great surprise.

The New York State College of Agriculture, at Cornell University, for the first time announces courses of instruction in home economics; also that the work in this line of studies will be in charge of Flora Rose, '05, and Miss Martha Van Rensselaer. A four-year course is planned leading to the degree of Bachelor of Science, also a winter course designed for those requiring brief practical training. The courses will be open to students of other courses. We may be sure that the work in charge of Miss Rose will be prosecuted with energy and ability.

J. R. Coxen, '07, is now located at Wilkinsburg, Pa., his address being 814 Rebecca Avenue. He has been there three months and enjoys his work very much. He is out of the thickest of the smoke of Pittsburg, the center of which is about seven miles distant. There are nine K. S. A. C. men there now. E. L. McClaskey, '07, joined them about three weeks ago and is working for the American Locomotive Works over in Allegheny. The rest of the crowd are working for the Westinghouse Company, Mr. Coxen being employed at present in the transformer mounting section, but has a change of work about once a month.

A. L. Cottrell, '03, was married Tuesday evening, October 23, at Elgin, Ill., to Miss Florence Margaret Judson of that city. The bride is a graduate of the local high school of the class of '02. She then studied at the Art Institute, Chicago, and later at a private school of arts and crafts. Since then she has conducted a studio at her home and has had charge of the arts and crafts class at the Y. W. C. A. Mr. and Mrs. Cottrell will take an extended eastern trip and will reside either in Chicago or Albany, N. Y. Mr. Cottrell has been employed by the American Cereal Company as a traveling salesman heretofore, but will now be connected with one of the main offices at Chicago or Albany.

*Board of Instruction (concluded).*


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|                                                                  |                                           |
|------------------------------------------------------------------|-------------------------------------------|
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|                                                       |                                        |
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| William R. Lewis                                      | Custodian                              |

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# The Industrialist.

|                          |                 |
|--------------------------|-----------------|
| PRES. E. R. NICHOLS..... | Editor-in-Chief |
| PROF. J. D. WALTERS..... | Local Editor    |
| PROF. J. T. WILLARD..... | Alumni Editor   |

## TERMS AND VACATIONS.

### FALL TERM, 1907, THIRTEEN WEEKS.

|                                           |                              |
|-------------------------------------------|------------------------------|
| Saturday, November 2.....                 | Mid-term examination         |
| Thursday, November 28.....                | Thanksgiving Day vacation    |
| Thursday and Friday, December 19, 20..... | Examination at close of term |

### WINTER TERM, 1908, TWELVE WEEKS.

|                                        |                                                 |
|----------------------------------------|-------------------------------------------------|
| Monday, January 6.....                 | Examination for admission, at nine A. M.        |
| Tuesday, January 7.....                | Winter term begins                              |
| Tuesday, January 7.....                | Short courses in agriculture and dairying begin |
| Saturday, January 25.....              | Annual intersociety oratorical contest          |
| Saturday, February 15.....             | Mid-term examination                            |
| Thursday, March 19.....                | Annual concert                                  |
| Thursday and Friday, March 26, 27..... | Examination at close of term                    |

### SPRING TERM, 1908, ELEVEN WEEKS.

|                                         |                                                |
|-----------------------------------------|------------------------------------------------|
| Monday, March 30.....                   | Examination for admission, at nine A. M.       |
| Tuesday, March 31.....                  | Spring term begins                             |
| Saturday, May 9.....                    | Mid-term examination                           |
| Tuesday, May 19.....                    | Beginning of summer course in domestic science |
| Tuesday and Wednesday, June 16, 17..... | Examination at close of year                   |
| June 14 to 18.....                      | Exercises of Commencement week                 |
| Thursday, June 18, at ten A. M. ....    | Commencement                                   |
| June 19 to September 16.....            | Summer vacation                                |

### FALL TERM, 1908,

|                              |                                          |
|------------------------------|------------------------------------------|
| Wednesday, September 16..... | Examination for admission, at nine A. M. |
| Thursday, September 17.....  | College year begins                      |

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| ROLAND J. KINZER, B. S. A. (Iowa State College).....                      | Professor of Animal Husbandry                      |
| WALTER E. KING, M. S. (Cornell).....                                      | Professor of Bacteriology                          |
| THOMAS J. HEADLEE, Ph. D. (Cornell).....                                  | Professor of Entomology                            |
| .....                                                                     | Professor of Dairy Husbandry                       |
| JOSHUA D. RICKMAN.....                                                    | Superintendent of Printing                         |
| MISS MARGUERITE E. BARBOUR (Sargent Nor. Sch. Phys. Tr.).....             | Director of Physical Training                      |
| MISS ANTONETTA BECKER (Drexel).....                                       | Superintendent of Domestic Art                     |
| MISS ANNE M. BOYD, A. B., Lib. Sci. (Millikin).....                       | Librarian                                          |
| ROBERT J. BARNETT, B. S. (K. S. A. C.).....                               | Principal Preparatory Department                   |
| JACOB LUND, M. S. (K. S. A. C.).....                                      | Superintendent Heat and Power Department           |
| JOHN H. MILLER, A. M.....                                                 | Superintendent Farmers' Institutes                 |
| MISS LOBENA E. CLEMONS, B. S. (K. S. A. C.).....                          | Secretary                                          |

(Board of Instruction concluded on last page.)

# THE INDUSTRIALIST.

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VOL. 34.

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No. 8

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## *The Library.*

The Kansas State Agricultural College Library of 34,000 volumes occupies almost the entire first floor of the Fairchild (Library) Hall. The rooms devoted to library purposes consist of a reading-room, a stack-room with shelf capacity of 40,000 volumes, offices and storerooms. It is primarily a reference library and has naturally developed along the lines of agriculture, science, and engineering, although excellent collections of books pertaining to other subjects are also to be found.

The Library Department has charge of the College Experiment Station library, a collection of about 2400 bound bulletins, with a card index to nearly 5000 titles. By law the Library is a depository for the publications of the United States Government, and also the card catalogue to agricultural literature issued by the Department of Agriculture.

The system of departmental libraries has not been encouraged, and only a few such are in existence. That of the Botanical Department, the largest, contains about 2000 volumes.

In the last few years the library has grown at the rate of 1500 volumes a year. To meet the increasing demand for shelf room, seven new two-story iron stacks were erected last summer in the west end of the stack-room. The library staff, which consists of the librarian, two reference librarians, a cataloguer, and student assistants, are now working on a new dictionary catalogue which will greatly aid in finding and using the books.

All recommendations for the purchase of books come from the instructors, subject to the approval of the library committee, the president of the College, and a member of the Board of Regents, but all books are ordered and prepared for use by the library staff.

The books are arranged according to the Dewey decimal system of classification, a copy of which may be consulted in the office of the librarian. This system divides all knowledge into nine main classes, numbered from 1 to 9. A tenth class is formed, designated by zero, to include all works belonging to no

one particular class or that are so general in their scope as to include all other classes. The ten classes are as follows:

- 000—General works, bibliography, encyclopedias.
- 100—Philosophy, psychology, ethics.
- 200—Religion, Bible, church history.
- 300—Sociology, economics, education.
- 400—Philology.
- 500—Natural science.
- 600—Useful arts and industries.
- 700—Fine arts.
- 800—Literature.
- 900—History, travel, biography.

Each class is further divided into ten divisions, and each division into ten sections, then a decimal point is used, after which the subdividing is carried as far as is necessary. Thus, a book marked 973.5 belongs to the history of the United States war of 1812, as may be seen in the analysis of the number, class 9 (history), division 7 (North America), section 3 (United States), point 5 (war of 1812).

Some slight changes have been made in the classification of certain books in this library because of peculiar local conditions. (See Dewey Decimal Classification.) Biography is not classed under 920, its place according to the Dewey classification, but is placed with the class to which the biographee was connected. Thus, a biography of Longfellow is classed with American literature, and is marked 810B, the letter B showing that it is a book of biography. The life of George Washington is found with United States history, and is marked 973B; the life of a scientist is placed with science, etc.

All books are arranged on the shelf by their class-number, alphabetized by the first letter of their author's surname. For convenience in distinguishing books in the same class whose authors' names begin with the same letter, and to aid in keeping them in order on the shelf, each book is given an author mark. This consists of the first letter of the author's name followed by two or more numbers taken from the Cutter-Sanborn author-tables, a system of numbers arranged to correspond to certain combinations of letters.

The class-number with the author-mark is the book or call-number. It is printed on the back of the book and also on the cards in the catalogue which refer to the book. The call-number for the book "The Naval War of 1812," by Theodore Roosevelt, is 973.5, R78, and no other book in the library has this exact call-number. If

there are more than one book by an author in the same class, the first letter to the title is added to the author-mark to distinguish one book from the other. For instance, <sup>823.83</sup>D54 is the call-number for the novels of Charles Dickens, and by adding an m to D54, the author-mark, the call-number for the particular novel "Martin Chuzzlewit" is formed, <sup>823.83</sup>D54m, or, by adding a p, <sup>823.83</sup>D54p, we have the call-number for the "Pickwick Papers."

The library card catalogue is placed in the east end of the stack-room. It comprises four sections—an author, a title and a subject index, with cards arranged in alphabetical order, and a shelf-list arranged according to classification numbers.

The entire library is being recatalogued and the Library of Congress printed catalogue cards purchased. These cards will eventually be arranged in a regular dictionary catalogue, which will take the place of the present card catalogue.

The subject index belonging to the College Experiment Station is placed with the other catalogues in the stack-room. These cards are issued by the United States Office of Experiment Stations, and is a complete index to all circulars, bulletins and other publications sent out by the various agricultural experiment stations. It contains no author or title cards, and has a special scheme of classification, a copy of which may be found in the catalogue case.

Temporarily the dictionary catalogue to agricultural literature deposited in this library by the United States Department of Agriculture will be found in the librarian's office, and may be consulted there. In the course of time these cards will be filed in the new dictionary catalogue.

The accession-book is a chronological record of all books, pamphlets and maps added to the library, with a full description of each and all information concerning the purchase by the library.

The library is open on all College days, from 7:30 A. M. to 5:30 P. M., except during chapel, from 8:15 to 8:40 A. M., and on Mondays from 9:00 A. M. to 5:00 P. M. During the summer sessions it is open from 8:00 A. M. to 1:00 P. M.

The library is free to all for reference, but only students in attendance at College, instructors, alumni and members of the College community are entitled to draw books for home use. All books may be drawn from the library except most general reference works, reserved reference books, current and bound periodicals, and public documents.

Cards are issued at the loan desk, in the west end of the stack-room, to any of the above persons desiring to borrow books. This card entitles them to take two books at one time, with further permission to have them renewed for the same period unless a call has been made for them or they are needed for class work. Senior students or postgraduates may, with the permission of the librarian, take out more than two. Instructors are allowed the privilege of taking out as many as are needed for department work for an indefinite length of time, or until called for by the librarian. The instructor upon whose card the books are checked is held responsible for the return of the books.

All books must be checked out at the loan desk and returned there. No one will be permitted to have a book checked to him who does not present his card to be duly stamped. All cards when not in use must be left at the loan desk.

Users of the library have free access to all the shelves. Books shelved in the stack-room are not to be taken to the reading-room until properly checked out, and they must be returned to the loan desk when the reader is through with them. Likewise no book is to be taken from the reading room to the stack-room. Special request is made that the students do not leave books in the alcoves or return them to the shelves, as they are frequently put in the wrong places. If left on the tables they will be returned to their proper places by the assistants in charge of shelving of books.

A fine of two cents a day is incurred on all books kept out overtime, except for reserved or general reference books, on which a fine of ten cents a day is charged. Borrowed books are subject to recall at any time by the librarian.

Lost or injured books must be replaced. Any one found mutilating in any manner books, magazines or library furniture is liable to a fine.

Quiet and order must be maintained at all times in the library. Any individual failing to comply with these requests must forfeit his right to the use of the library.

All books of general reference, such as encyclopedias, dictionaries, indexes, atlases, and special reference works on science, literature, history, etc., are shelved in the reading-room and have an "R" printed on the label in red ink. These books are arranged according to their classification numbers. They are not to be taken from the reading-room.

The library receives about 130 technical, scientific, and popular periodicals. Current numbers of most of them are arranged in alphabetical order on the magazine-racks and in cases behind the

desk in the reading-room. Back numbers of all magazines, and current numbers of a few popular magazines having plates or half-tone illustrations, are kept in the store-room, and may be had by applying to the librarian in charge. There are about fifteen papers and periodicals pertaining to agriculture, live stock, and dairying which come to the library regularly. These are placed on the tables.

The daily newspapers are kept on racks near the east entrance to the reading-room. Nearly all the official county papers are received, and are filed Monday mornings in the pigeonholes near the east entrance.

It is requested that all magazines and papers be returned to their proper places on the racks. This takes but a moment's thought and trouble on the part of the reader, but saves the librarians much time and inconvenience.

A bulletin will be placed in the passageway between the reading-room and the stack-room, and will contain, from time to time, lists of interesting magazine articles or short bibliographies on current subjects.

The bound sets of periodicals of a general nature, such as the *Atlantic Monthly*, *Harper's*, *Edinburg Review*, etc., are shelved on the north side of the stack-room. The bound sets of the technical and scientific periodicals are placed with the class to which they belong, *e. g.*, the *Electrician* is placed with books on electricity, the farm magazines with agriculture, and so on.

The library possesses the following indexes to periodicals. These are placed in the reading-room with the general reference books.

Poole's index to periodical literature. 1802-1901. 5v. (Indexes 427 periodicals, and is supplemented by the following indexes):

Annual literary index. 1900-'06. (Indexes about 150 periodicals.)

Cumulative index. 1896-1901. (Indexes about 54 periodicals.)

Library index, January, 1905-date. (Indexes 67 periodicals.)

Descriptive index of current engineering literature. 1884-'91. 3v. (Indexes nearly 200 periodicals and gives brief notes.)

Engineering index monthly. 1884-1905. 4v.

The library keeps on file all catalogues, announcements and reports of other educational institutions sent it. These are not classified or catalogued, but are arranged in alphabetic order in the reading-room. Lists of all periodicals, newspapers and college publications are kept at the desk in the reading-room and may be consulted there.

Certain books are frequently needed for a few days or weeks

by instructors for the use of special classes, and are taken from their places on the shelves and put on a special reserved shelf. These books may be used any time during library hours by filling out one of the reference blanks at the loan desk, but they are not to be taken from the library except at hours when the library is closed.

This library, being a depository of the United States Government, receives the congressional or sheep-bound set of the public documents. They are shelved in the second story, on the north side of the stack-room, and are arranged by serial numbers, which brings all the volumes of one Congress together on the shelf, placing the sessions of Congress in chronological order. All documents bound in cloth or paper, issued by departments and bureaus, are placed with the class to which they pertain. The public documents are the property of the government and are never allowed to leave this library.

The following indexes to the public documents are kept in the reading-room:

Ames, J. G. Comprehensive index, 1881-1893, 47th to 52d Congress; Wash., 1905.

Tables of and annotated index to the congressional series of the United States Public Documents; Wash., 1902. Covering documents of the 15th to 52d Congress. Alphabetized by the subject and author, with various tables.

Monthly Catalogue of the Public Documents; Wash., 1895 date. Price-list by bureau and division (formerly by department). A monthly index every six months, with annual index in December. The special value of the catalogue is to show how and when documents may be obtained, and the price of the available ones.

Realizing the vast quantity of valuable information contained in the public documents on subjects of special value to the students and instructors of this College, and realizing further that this material is at present most insufficiently catalogued and inaccessible for use, the library staff has thought it advisable to begin the re-cataloguing with them.

A large selection of bibliographical material is to be found in the library for research work, selecting and buying of books. These are found in the reading-room and the office of the librarian. They include catalogues of other libraries, American and English trade bibliographies, auction and sale catalogues of the leading American, English and foreign book sellers, beside many collections of material on specific subjects.

The members of the library staff are always most willing and

pleased to give assistance where it is needed, and request that students do not hesitate to inquire about any matter they do not understand. However, for the students' own good, it is urged that they learn to use the library. One not only saves time by being able to help oneself, but usually much more satisfactory results are obtained.

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***A Week's Circuit of Farmers' Institutes in Kansas.—Its Impression on a Missouri Worker.***

The institute at Olathe opened October 21 under ideal weather conditions. We had a good-sized audience of enthusiastic farmers, gentlemen and ladies, as well as many city folks. They were deeply interested in farm stock, including hogs, cattle, sheep, and poultry in particular. They showed deep interest in the matter of proper feeds, especially pastures and commercial concentrates. The farmer very naturally led to the discussion of alfalfa growing, that section being well adapted to its growth, although it is not, as yet, so generally and perfectly understood as its importance would warrant.

October 22 found us at Mound City, with a large and appreciative audience, many of whom took an active part in the discussion of subjects under consideration, thus making a most interesting local program added to the work of the regular institute speakers. The carefully prepared and personally presented paper of Mrs. Emma Morse, on "Our American Farm Homes," was indeed highly commendable and inspiring. The farmers were deeply interested in crop rotation, for some of the soil thereabouts shows plainly the effects of wear and injudicious management. However, the leading ones are now alive to the situation, and sheep are being rapidly introduced and, added to the active interest manifest in hogs and dairy cattle in that section, are beginning the process of restoration. Red and Alsike clovers do well and the restoration should be rapid. Men and women alike were deeply interested in poultry, and some splendid shorthorn cattle and good hogs of high breeding were to be seen in the suburbs and near the public roads, which of course could not escape our notice.

We were favored with the best of weather at Ft. Scott on October 23. The attendance was not overly large, although the energetic and efficient secretary, C. F. Miller, had done everything within his power to bring about beneficial results. After all, the institute closed with a satisfactory attendance of enthusiastic persons of a high order of intelligence, showing deep interest in dairy cattle and milk production, with poultry and

swine to utilize the by-products, and live discussions ensued relative to the comparative value of alfalfa, clover and cow pea hays in supplying protein rations, the part that they may now take in supplying the needs of the present high-priced protein concentrates, and the methods to insure the successful growth of these various forages. Farm labor here was a very big consideration, the railroad shops and various public works drawing heavily on the available labor, which fact also is largely explanatory for the attendance at the institute not being larger. The price of both poultry and eggs was high at this point and have continued so, and many are engaged in poultry production on quite a large scale. Secretary Miller, it may be remembered, is the great good-roads enthusiast of Kansas, and he drove us many miles over ideal rock roads that have recently been constructed as a result of his enthusiasm and interested financial assistance. There are none better.

October 24 found us at Columbus. The president of the institute, Frank Hoover, and the secretary, Prof. S. W. Black, we soon discovered, were both of the class of men who "do things." They began by using our force at both the court-house and the high school simultaneously. At the school the subjects of "Agricultural Education" and "Poultry Production" were presented the advanced grades. At the farmers' meeting we were soon deep into the subjects of "Hog Raising," "Hog Pasturage," "Balanced Rations for Hogs," "Dairy Foods and Pastures," "Poultry and Egg Production," "Special Customers for Poultry Products," "Sheep," "Farm Labor Situation," and "Agricultural Training for our Boys." Great interest and enthusiasm prevailed throughout and the attendance was good. With reluctance we must leave these people and "move on."

Altamont was our institute point on October 25. It would appear that nature had ceased to smile so bountifully on our efforts at this time, for the day was "dark and dreary." Rain continued to descend almost incessantly throughout the day, which somewhat affected the attendance and seriously interfered with the grand live stock street parade that was so elaborately planned as a part of the occasion. But no discouragements of this kind could dampen the ardor of the farmers and stockmen of the country surrounding Altamont. They are not the kind who will "down." Professor Wheeler conducted a thorough demonstration in cattle judging in the forenoon, and a like one in horse judging in the afternoon. Enthusiasm ran high, and his work was very much appreciated and favorably and thankfully com-

mented upon. The subjects of greatest interest here were "Horse and Cattle Breeding," "Pork Production," "Poultry Rearing and Marketing," "Pasture Grasses," "Hay Crops to Secure Balanced Ration," "Concentrates," "High Prices of Feed Stuffs at the Present Time," and "The Farm Labor Situation." Altamont is famous as the home of the "Hildreth corn," the most uniformly high-class corn that we have seen on this institute tour in Kansas. We here had the pleasure of meeting Mr. C. E. Hildreth, the originator of this new breed of corn, and in this respect he may truly be classed as one of our public benefactors.

October 26 was our date at Elk City. The day was ushered in with a drizzling rain, which lasted throughout the day. Saturday trading, coupled with the inclemencies of the weather and the resulting bad roads, worked against a satisfactory attendance, somewhat discouraging to Secretary E. A. Stark, who, by the way, did his part well, leaving nothing undone that would contribute to the success of the meeting. Elk City is surrounded by a fertile section of country where are raised large crops of both corn and wheat, where clover and meadow fescue thrive beautifully, and where alfalfa is successfully grown; thus the farmers are prosperous and happy. Their interests in the meeting were in "Crop Rotation," "Improvement of Live Stock," "Hog Feeding," "Poultry Rearing and Marketing," "Concentrates," with which to balance a corn ration, accompanied with the predominating forage of that section. The people we met there were a good class, and we would have indeed been pleased to have met many more of them.

A reflection of the week's work impresses me very favorably with the section of Kansas visited on this circuit, and the class of people met. I feel that they are prosperous, because nature has treated them kindly and because they deserve to be.

Fraternally,

P. E. CRABTREE, Hannon, Mo.

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The Faculty-senior reception at the Girls' Gymnasium last Monday night was successful in every respect. The professors and assistants were out in full force, and with their wives received the seniors in proper style, after which all present enjoyed themselves informally till the bells rang the eleventh hour. Professor Brown's orchestra furnished some very fine music, and there were light refreshments served in two bowers. The drill hall was beautifully decorated with vines, palms and fall leaves. All report a good time.

*Local Notes.*

The present enrolment of the Manhattan city schools is 903.

The junior class gave a Hallowe'en party on Monday night in Kedzie Hall.

It is reported that two more Filipino students will soon come here to study.

Ex-regent Ed. Secrest, of Randolph, was a welcome visitor "on the Hill" last Friday.

The carpenter shop is making a new dress case for the Department of Domestic Art.

Professor McKeever addressed the boys of the Topeka Industrial School last Sunday.

The Hamilton society entertained the Ionian society Saturday evening at the Domestic Science Hall.

Assistant Wilson has moved into the Coffey house, on Leavenworth street, between second and third.

Professor Headlee has moved into the new Hines residence, at the corner of Seventh and Leavenworth street.

The carpenter shop has started work on five new roll-top office desks. Four of these will be of oak and one of walnut.

S. R. Tilburg, '07, visited College last week. He came from Williams, Ariz., where he fixed a Santa Fé locomotive, and was on his way to Philadelphia, where he intends to enter the Baldwin Locomotive Works as a special apprentice.

The Riley County Farmers' Institute was in session at Manhattan Thursday and Friday of this week. The attendance was good and the corn exhibits first class. We will publish a full report of the program in the next INDUSTRIALIST.

The well-known lecturer, humorist and cartoonist, Alton Packard, gave entertainment number two of the society lecture course last Friday night at the Auditorium. His cartoons and stories were well received and he had a full house.

The College literary societies are beginning to look for orators for the intersociety contest next January. Ralph Hull was chosen chairman of the Oratorical Board, at a meeting held lately, and some of the would-be contestants have already commenced training.

Professor McCormick has received word from the Expanded Metal and Corrugated Bar Company, of St. Louis, Mo., that they have sent 500 pounds of different sizes of corrugated iron to be used in continuing the tests of reinforced concrete beams and culverts, started last year.

The sale of Duroc-Jerseys owned by Grant Chapin, of Green, Kan., held last Wednesday afternoon at the College barn, was highly satisfactory as to prices. The whole bunch averaged \$56.81. The highest price paid for a gilt was \$100, several being sold at that price. A fine looking boar brought \$325.

The Haskell Indians' second team beat our freshmen team last Saturday afternoon at the Manhattan athletic field by a score of 15 to 12.

The College payroll for October reached a total of \$15,051.62. Of this amount the students received \$1419.42, the employes \$2265.53, the staff of the Station \$1215 and the officers and instructors, \$10,161.67.

Mr. Miyawaki celebrated the birthday of the emperor of Japan Sunday by treating some of his friends to "mousse" (ice-cream) which he made himself. Two different kinds were served, both very artistically colored—one to represent the Japanese flag and the other the U. S. flag. "Tommy" is quite expert at making ice-cream.—*Herald*.

To-day, Saturday, occurs the annual football game between this College and Washburn College, of Topeka. It will be played at Athletic Park and promises to be a contest in which each team will try its best. Reports from Washburn say that their rooters have arranged for a student excursion to Manhattan. A special train has been engaged to bring them here with banners flying.

Complaint is being made that during the past week or two many persons have come up on the campus in quest of autumn leaves, which in itself is not such a great wrong. But in their eagerness to get the leaves they pull down the entire branch and carry it off with them. It should not be necessary to remind these persons that there is a State penalty on this kind of work.—*Nationalist*.

The Kansas law regulating the sale of feeding stuffs especially provides that condimental or medicinal stock foods shall come within its scope and pay a registration fee of fifty dollars if they sell for more than forty dollars per ton. Last August M. W. Savage, for the International Stock Food Company, applied to the United States court for an injunction to prevent the Director of the Experiment Station from attempting to collect this registration fee or interfere in the sale of their stock food in this State. The case has taken its course through the court, and Judge Smith McPherson has recently denied the injunction, thus upholding the State law in this respect.

An Experiment Station bulletin just issued by Prof. H. F. Roberts and Asst. Prof. G. F. Freeman, of the Department of Botany, treats of the prevention of sorghum and Kafir-corn smut. They give the following as the result of their experiments at the College Station: (1) Grain smut of cultivated sorghum, Kafir-corn, etc., can be absolutely prevented by soaking the seed for two hours in a water solution containing one-half of one per cent of commercial formaldehyde. (2) The cost of the formaldehyde treatment in the above strength amounts to six cents per bushel of seed for the formaldehyde used. Smut comes from a microscopic plant which penetrates the young corn stalk and at maturity produces spores in the ears.

The football game last Saturday at Athletic Park, between Ottawa University and the Agricultural College, resulted in a victory for our team. The score stood 16 to 6.

The Department of Mechanical Engineering has completed one of the two shapers that have been under construction by the students during the summer and fall. The machine is now set up and is in use. It compares very favorably with the other machines of the shop, shows accurate construction, and is susceptible of delicate adjustment.

Prof. T. J. Headlee returned Tuesday, October 29, from an inspection trip into the southern and western parts of the State, where he had gone to investigate certain reports of the appearance of the green-bug that had been published in the local press. He covered in a cursory way the territory about Salina, McPherson, Hutchinson, Great Bend, Larned, Garden City, Anthony, Wellington, Winfield, Arkansas City, Humboldt, and Ottawa, but found the green-bug practically absent. He found several species of plant lice, sufficiently like the green-bug to be mistaken for it, and thinks that these have probably given rise to most of the newspaper accounts recently published in that part of the State. On this trip the professor met Entomologist Warren Knaus, of McPherson, who took much interest in the investigation and accompanied him on several excursions. He found the chinch-bug sufficiently abundant to warn the farmers to look out for it.

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### ***Alumni and Former Students.***

Changes of address: W. B. Thurston, '06, Enid, Okla., in care of New State Butter Company; C. A. Maus, '04, 1406 East Sixth street, Topeka, Kan.; W. P. Tucker, '92, and Stella (Kimball) Tucker, '94, Fundicion, Sonora, Mexico, via Guaymas; E. C. Thayer, '91, 2950 Hale street, Denver, Colo.; T. L. Jones, '96, 609 Olive street, Kansas City, Mo.; W. N. Birch, '04, North Topeka, Kan., care of Reform school.

Some of the friends of Schuyler Nichols, '98, Harriet (Nichols) Donohoo, '98, and R. T. Nichols, '99, know that their father, Dr. Nichols, went to Alaska on a vacation trip five or six years ago. He became infused with the spirit of fortune-hunters, and finally abandoned his medical practice in the search for gold. In recent years his health has been much impaired, and his death Sunday, November 3, was no surprise. He died at Fairbanks, Alaska, and many friends will join in sympathy with his family, all of whom were separated from him and from each other at the time.

Each number of the *Alumnus* continues to be an improvement upon its predecessor. The issue for October contains a large number of items that escaped the editor of the INDUSTRIALIST. Every graduate should subscribe for that magazine, for in addition to the items of news each number contains interesting and well-written letters from the alumni. In this number D. S. Leach, '81, breaks his long silence in a characteristic "Letter From a

Wanderer;" F. C. Sears, '92, on "Apple Growing in Nova Scotia," gives an insight into our friend's development; R. R. Birch, '06, has an interesting letter describing his experience in getting from San Francisco to Manila, while the history of the shepherd's crook is brought up to date by the editor, who ventures no prophecy for the future, but expresses mingled hopes and threats. The following items are from this number:

Edith McDowell, '93, is taking a course in domestic science at Stout's Manual Training School, in Menomonie, Wis.

P. A. Cooley, '06, who recently graduated from the Salina Business College, is now private secretary to President Nichols.

L. W. Fielding, '05, has gone from Chicago to Hazleton, Pa., where he is employed by the Consolidated Telephone Company of Pennsylvania.

Harry Fay, '01, and Miss Vera M. Hopper were married, August 14, at the home of the bride's parents, in Wilsey, Kan. Mr. and Mrs. Fay are at home on their farm three and one-half miles west of Wilsey.

Henry Thomas, '04, who has been employed in electrical engineering work in New Orleans, came up from the south the first of August and, after a month's vacation in Kansas, returned to Cincinnati, O., where he is engaged in construction work for the Allis-Chalmers Company. His Cincinnati address is 2349 Kenilworth Avenue, Norwood.

The Utah Agricultural College, for which Mrs. Dalinda (Mason) Cotey, '81, has labored so long and faithfully as dean of the school of domestic science and arts, has passed under a new administration, and Mrs. Cotey, with nearly all the other "Gentile" teachers, has left. Mrs. Cotey writes that she and her daughter Hazel are spending a year in California and are enjoying the beautiful scenery and perfect climate very much. They are living in Highland Park, one of the most beautiful residence portions of Los Angeles, and Miss Hazel is attending Occidental, a Presbyterian school.

C. H. Thompson, '93, is planning to attend Commencement exercises and the banquet next year, and offers to borrow Gabriel's trumpet to wake everybody up for the occasion. Mr. Thompson's intentions are beyond reproach and we cheerfully resign the task to him, hoping that he will meet with greater success than some of the rest of us have had in similar attempts. Mr. Thompson writes: "Albert Dickens, '93, spent a few hours with me between trains on his way to Jamestown last week. We had a splendid visit for so short a time. He could tell me so much about the College and classmates. About two weeks ago J. B. Thoburn, '93, called on me and visited the garden. Joe is traveling lecturer for the Frisco railroad, and was on his way to give a series of lantern lectures on Oklahoma and the southwest, through Ohio, West Virginia, and Pennsylvania. He is very enthusiastic in the work and, with his steady flow of language, his success is no surprise to his many friends."

*Board of Instruction (concluded).*


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|------------------------------------------------------------------|-------------------------------------------|
| CLARENCE L. BARNES, D. V. M. (Cornell)                           | Asst. Professor of Veterinary Science     |
| JOHN O. HAMILTON, B. S. (Chicago)                                | Assistant Professor of Physics            |
| ANDREY A. POTTER, S. B. (Mass. Inst. Tech.)                      | Asst. Professor of Mechanical Engineering |
| ROBERT H. BROWN, B. M. (Kan. Con. of Music), B. S. (K. S. A. C.) | Asst. Professor of Music                  |
| BENJ. R. WARD, A. M. (Harvard)                                   | Assistant Professor of English            |
| GEO. A. DEAN, M. S. (K. S. A. C.)                                | Assistant Professor of Entomology         |
| GEORGE F. FREEMAN, B. S. (Ala. Polytech. Inst.)                  | Assistant Professor of Botany             |
| GEO. C. WHEELER, B. S. (K. S. A. C.)                             | Assistant Professor of Animal Husbandry   |
| WALTER E. MATHEWSON, B. S. (K. S. A. C.)                         | Assistant Professor of Chemistry          |
| WILLIAM H. ANDREWS, A. B. (Univ. of Chicago)                     | Assistant Professor of Mathematics        |

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Historical Society

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No. 9

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**Manhattan, Kansas**



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# The Industrialist.

|                          |                 |
|--------------------------|-----------------|
| PRES. E. R. NICHOLS..... | Editor-in-Chief |
| PROF. J. D. WALTERS..... | Local Editor    |
| PROF. J. T. WILLARD..... | Alumni Editor   |

## TERMS AND VACATIONS.

### FALL TERM, 1907, THIRTEEN WEEKS.

|                                                              |                              |
|--------------------------------------------------------------|------------------------------|
| Thursday, Friday, and Saturday, November 28, 29, and 30..... | Thanksgiving vacation        |
| Thursday and Friday, December 19, 20.....                    | Examination at close of term |

### WINTER TERM, 1908, TWELVE WEEKS.

|                                        |                                                 |
|----------------------------------------|-------------------------------------------------|
| Monday, January 6.....                 | Examination for admission, at nine A. M.        |
| Tuesday, January 7.....                | Winter term begins                              |
| Tuesday, January 7.....                | Short courses in agriculture and dairying begin |
| Saturday, January 25.....              | Annual intersociety oratorical contest          |
| Saturday, February 15.....             | Mid-term examination                            |
| Thursday, March 19.....                | Annual concert                                  |
| Thursday and Friday, March 26, 27..... | Examination at close of term                    |

### SPRING TERM, 1908, ELEVEN WEEKS.

|                                         |                                                |
|-----------------------------------------|------------------------------------------------|
| Monday, March 30.....                   | Examination for admission, at nine A. M.       |
| Tuesday, March 31.....                  | Spring term begins                             |
| Saturday, May 9.....                    | Mid-term examination                           |
| Tuesday, May 19.....                    | Beginning of summer course in domestic science |
| Tuesday and Wednesday, June 16, 17..... | Examination at close of year                   |
| June 14 to 18.....                      | Exercises of Commencement week                 |
| Thursday, June 18, at ten A. M. ....    | Commencement                                   |
| June 19 to September 16.....            | Summer vacation                                |

### FALL TERM, 1908,

|                              |                                          |
|------------------------------|------------------------------------------|
| Wednesday, September 16..... | Examination for admission, at nine A. M. |
| Thursday, September 17.....  | College year begins                      |

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|                                                        |              |
|--------------------------------------------------------|--------------|
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(Board of Instruction concluded on last page.)

# THE INDUSTRIALIST.

VOL. 34.

MANHATTAN, KAN., NOV. 16, 1907.

No. 9

## ***Antitoxins and Vaccines—Their Preparation and Value.\****

Since the advent of bacteriology, and through its study a knowledge of the cause of many infectious and contagious diseases, our attention is called more and more to means of prevention rather than to cures. Most of the infections are bound to run their course when once the body becomes the host for the microscopic organisms which are their cause. The disease conquers or is vanquished as the fight wages between the virulency, or disease-producing power of the micro-organisms, and the resistance, or degree of vitality, of the patient. An infectious disease really cannot be cured. Many infectious diseases may, however, be prevented or their courses modified by preventative treatment.

A town may be the center of an epidemic of typhoid fever through polluted drinking water. The people who suffer from that epidemic cannot be actually cured, but the sickness might have been prevented by a pure water-supply. Diphtheria may be conquered and the patient saved by the free and early use of diphtheria antitoxin. Smallpox may be prevented, or at least its virulency greatly reduced, by the use of the method of vaccination. Common sense teaches us that "An ounce of prevention is better than a pound of cure."

*Diphtheria Antitoxin.*—From the throat of a patient suffering from this disease the diphtheria germs are obtained and allowed to grow on a tube of blood serum media. After the organisms have become accustomed to conditions of living outside the tissues of the patient they are planted in large flasks of beef broth, in which they are allowed to develop and multiply for several days, being kept at the normal temperature of the human body. During this period of growth and multiplication the diphtheria germs give off from their bodies into the beef broth soluble poisonous substances peculiar only to diphtheria. It is this same poisonous substance, when given off by the microbes during their multiplication on the mucous membrane of the throat of a child, which may cause the death of the patient.

\*The writer is indebted to Parke, Davis & Co., Detroit, Mich., for the photographs appearing in this article.

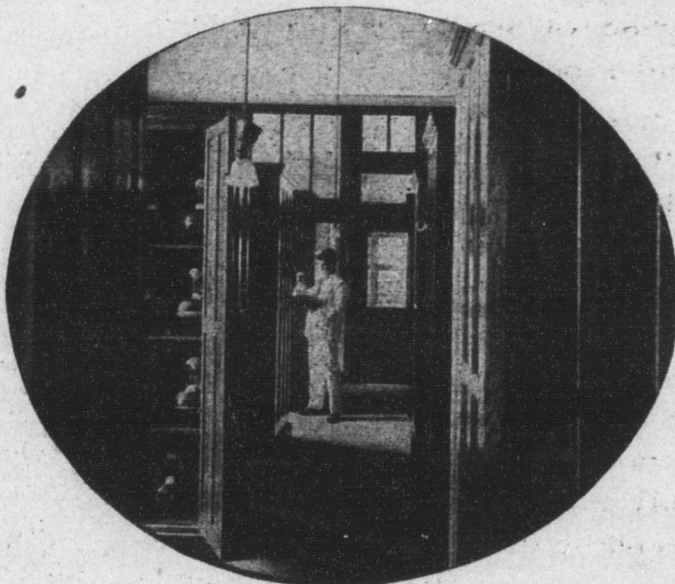
This beef bouillon in which the diphtheria germs have grown is called diphtheria toxin. The bacteria are now filtered out of the toxin and the strength of the product is determined by injecting



Toxin Planting.

it into guinea-pigs in comparison with standard toxins whose strength or killing properties are already determined. The toxin is now ready for its use in producing diphtheria antitoxin.

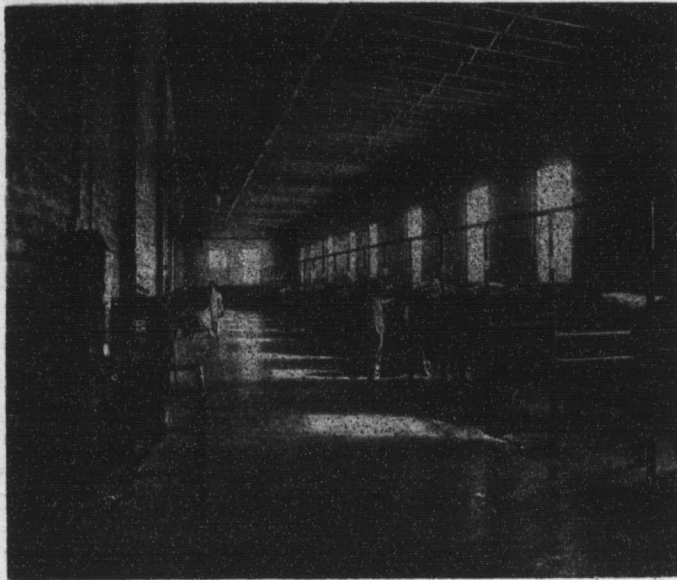
A normal horse, which has previously been subjected to a test



Incubating Room.

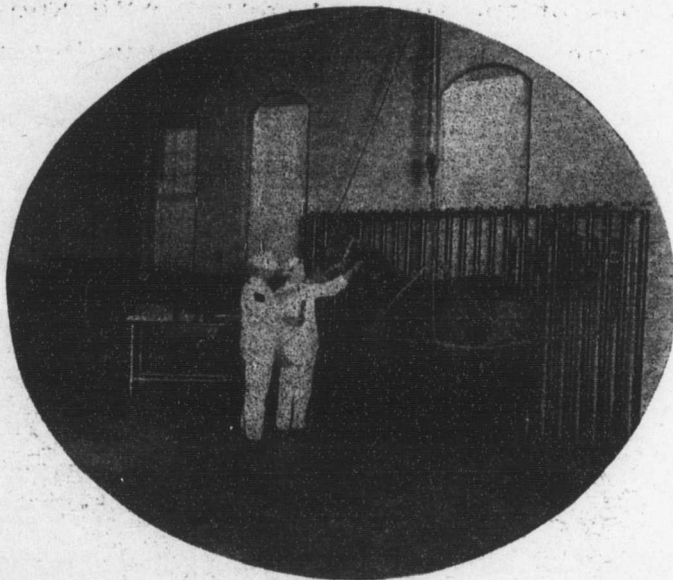
for glanders and other diseases, and has been passed as absolutely healthy by a competent veterinarian, is used to manufacture the antitoxin. The animal is injected at first with very small doses of the toxin described above, and as he gradually becomes immunized or accustomed to the diphtheria poison the dose of toxin is corre-

spondingly increased. During this time, within the system of the horse, there is a constant struggle between the poisonous, disease-producing diphtheria toxin and the resistance of the host, or vital-



Serum Horse Stable.

ity of the animal. Finally, the natural resistance of the horse conquers and there are built up in his tissues and blood anti-bodies, which are able to successfully combat the diphtheria poison. The blood of this animal, therefore, because it has acquired an



Injecting Toxin.

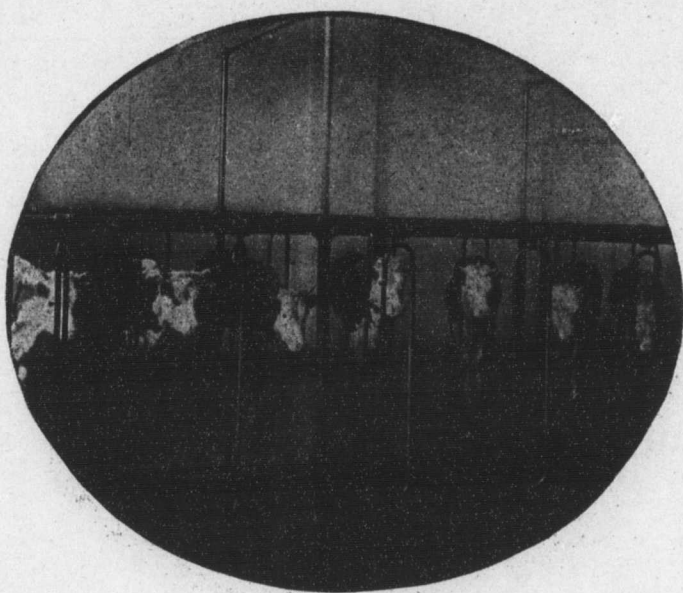
abundant supply of these anti-bodies, is called diphtheria anti-toxin. A large quantity of this horse's blood is then aseptically collected from the jugular vein. After the blood is collected it is allowed to stand undisturbed for several hours, when the clot will have formed and the clear, straw-colored serum will have

separated from the blood clot. This serum, which contains the diphtheria antitoxin, is now filtered through porcelain to remove any foreign materials. The strength or amount of antitoxin in



Standardizing Antitoxins by Injecting Guinea-pigs.

this horse serum is determined by injecting guinea-pigs with varying quantities of the serum, together with known doses of the diphtheria toxin. After the careful examination and analysis



Vaccine Heifers.

of the antitoxin it is filled in sterile glass syringes and is ready for use.

*Tetanus Antitoxin.*—This product, which is the specific treatment for lockjaw, is made in practically the same way as diphtheria antitoxin.

*Smallpox Vaccine.*—This is the material which is secured from the pimples or vesicles on cattle which have been infected with

cowpox. The vaccine is made up of the pulp or core of the vesicles. In producing the vaccine, two-year-old heifers are used. A heifer, intended for such use, after being pronounced absolutely healthy by a veterinarian, is first washed from head to foot with soap and water. She is then placed on her back on an operating table and the belly and inner surface of the thighs are shaved and disinfected, then rinsed with sterile water. On this prepared surface the "seed vaccine," or infective cowpox material, is planted by scarafying the skin with a sterile knife and rubbing the seed vaccine over the linear incisions. The animal is now kept in a special propagating room and is attended day and night by a man who appreciates the importance of keeping the animal and everything about her scrupulously clean. After about seven days the contents of the vesicles or postules which have developed on the inoculated areas are removed in an aseptic manner and placed in sterile dishes. This material is ground up and mixed with glycerin, which acts as a preservative. It is injected into guinea-pigs to determine the absence of any harmful bacteria, and tested on animals as to its vaccinating properties. It is then placed upon sterile ivory points, which are enclosed in sterile glass vials and is ready for use.

Diphtheria antitoxin and smallpox vaccine are universally recognized as being of great value therapeutically. A somewhat provisional list, based upon the recognized value of some of the antitoxins and vaccines, might be made as follows:

(a) Those whose value has been proven by extensive practical use and reliable statistics:

1. Diphtheria antitoxin.
2. Tetanus antitoxin.
3. Bubonic Plague antitoxin.
4. Smallpox vaccine.
5. Blackleg vaccine.

(b) Those which are of value as shown by records of cases, but not as yet generally accepted as therapeutic agents:

1. Streptococcus antitoxin.
2. Anthrax vaccine.

(c) Some of those diseases the antitoxins and vaccines of which are still in the experimental stage:

1. Tuberculosis.
2. Dysentery.
3. Gonococcus.
4. Hog cholera.
5. Swine plague.
6. Pneumonia.
7. Typhoid fever.

The great value of diphtheria and tetanus or lockjaw antitoxin and smallpox vaccine has been proven beyond a doubt. The outbreaks of smallpox which occur in our own country at the present time are very mild in comparison with the terrible devastation which followed the sweep of this disease thirty or more years ago. The virulency of this disease has been and is gradually being checked by the free use of vaccine. Certain, also, is the fact that in the vast majority of cases vaccination will prevent smallpox.

The death rate from diphtheria in the city of Baltimore in 1896, without diphtheria antitoxin was, 51.87 per cent of all cases. In 1898, when the antitoxin was freely used, only 5.73 per cent of those suffering from diphtheria died.

A striking illustration of the efficiency of diphtheria and tetanus antitoxin is afforded by the use of experimental animals. Inoculate six guinea-pigs with diphtheria toxin at the same time, injecting into three of them ordinary doses of the antitoxin. In less than four days the three pigs which received no antitoxin will be dead, while the others will show no symptoms of disease. Introduce into the muscles of one leg of each of six guinea-pigs some tetanus toxin, and place under the skin of three of these some tetanus antitoxin. The three which received the antitoxin, provided it was introduced early in the course of the disease, will remain healthy and active. The three guinea-pigs which received the toxin alone will, in two or three days, have no use of the limb which was inoculated, the paralysis will gradually extend to other muscles of the body, and in less than seven days the animals will die with their jaws locked in tetanic spasm.

Unreliable remedies and patent nostrums should be avoided. On the other hand, scientific preparations of known value should be employed whenever their use is indicated. In spite of the undisputable fact that smallpox vaccine and diphtheria antitoxin have made great headway against smallpox and diphtheria, yet there are many individuals who will not use these useful measures against the diseases in question. Surprisingly true, also, is the fact that some physicians dispute the worth of these specific treatments.

Happily, those who oppose these measures belong to the minority. At the present time there are very few people in our country who do not have upon their arm the scar from a successful vaccination. To-day the majority of cases of diphtheria are treated with the antitoxin. May the time soon come when not a single child shall die from diphtheria because of the absence of the antitoxin treatment.

WALTER E. KING.

***Prof. Elbridge Gale Passes Away.***

Letters from Florida announce the death from old age, at the residence of his daughter, Mrs. W. H. Sanders, near Mangonia, of Rev. Elbridge Gale. To the early students and teachers of the Kansas State Agricultural College he is better known as Professor Gale. He occupied the chair of botany and horticulture at this College from 1870 to 1878, and was president of the State Horticultural Society for nearly the same period.

From the *Palm Beach*, published at West Palm, Fla., we excerpt the following biographical notes of the veteran horticulturist:

"Elbridge Gale was born on Christmas, 1824, in Bennington, Vt. In his youth he attended Brown University, and later he was a student at and graduate of the Baptist Theological Seminary at New Hampton, N. H.

"His first pastorate was at Johnson, Vt., where he was married in 1853 to Miss Elizabeth C. Carpenter. From Vermont he went to Pavillion, Ill., and was pastor of the Baptist church in that city for eight years. He went to Kansas from Illinois, and in 1864 accepted a call from the Baptist church in Manhattan, Kan., and remained as its pastor till he was offered the chair of horticulture in the Kansas State Agricultural College, which was also located there at Manhattan, and which position he accepted. While still pastor of the Baptist church he was elected as county school superintendent of Riley county, Kan., and was reelected for several terms.

"Rev. E. Gale came to Lake Worth in November, 1884, for his health, and was always interested in the horticulture of this section. He was the first president and an active member of the Lake Worth Horticultural Society as long as it was in existence, and it was largely through his efforts that H. E. Van Deman, United States horticulturist, was induced to visit and become interested in this section enough to have the government procure from India some Mulgoba mangoes, mangosteens and durians, and some figs and olives from Italy for distribution to the planters connected with the society. Of all the Mulgoba mango trees planted, Mr. Gale was the only one who succeeded in keeping his alive, and it still remains as a living monument of his success as a Florida horticulturist. The other trees from India all died, but few if any of the figs lasted very long, and of the olives, it is probable that a few trees Mr. Gale kept alive all these years are the only ones now living, and these have never borne any fruit though nearly twenty years old now. He was also president of the Lake Worth Pioneer Association at the time of his death.

"His wife died at their home in Mangonia in the spring of 1893. He leaves an only son and oldest child, Geo. A. Gale, of Mangonia, a daughter, Mrs. Ella M. Kedzie, of Lansing, Mich., and a youngest child, his daughter, Mrs. Hattie L. Sanders, of Mangonia. He also leaves a sister, Mrs. Mary Fay, in Pennsylvania, a brother, Isaac Gale, in Oregon, another brother, Ansel Gale, in Chicago, besides a host of warm personal friends among the pioneers and others to mourn his loss."

We may add also that Professor Gale was one of the founders of the Manhattan Horticultural Society; that he planted the College arboretum east of the Horticultural Hall and the forest plats on the old College farm. In 1879 he ran for congressman of the first Kansas district, on the greenback platform. In short, his was an active and useful life, and thousands of pioneer Kansans and former students of the College are indebted to the kindly old man, now buried on the beach of his new home state, Florida.

### ***Kansas and the Farmers' Institute.***

According to the last Year-book of the United States Department of Agriculture, farmers' institutes were held last year in all the states and territories of the Union excepting Alaska, Florida, Nevada, New Mexico, and Washington. In every state, excepting Missouri and Porto Rico, which were not reported, appropriations were made by the state for their support or assistance. The published summary of the work shows some interesting facts. For instance, the largest appropriation for this important work was \$30,281.55, made by Illinois, which held 108 institutes; the second largest appropriation, \$20,500, was made by Pennsylvania, which held 226 institutes. Nebraska spent \$8607 of state money on 160 institutes; Iowa, \$8096 on 69 institutes; Minnesota, \$20,238 on 105 institutes; Colorado, \$4000 on 40 institutes, while Kansas held 155 institutes attended by nearly 30,000 farmers and only expended \$2338 of state money.

While this record speaks volumes for the efficiency of the Kansas State Agricultural College, under whose auspices these institutes had been conducted for the past 28 years without State aid, and for six years with it, the fact remains that it has been a heavy draft upon the resources of the institution.

Illinois expended an average of more than \$281 on its institutes while Kansas only expended a little more than \$15.10 per institute and held many more of them. The work entailed by these institutes has been a heavy draft upon the time of the professors,

whose salaries are paid out of the College funds and whose time is taken away from their class-room duties. Surely these figures contain sufficient argument for a more liberal appropriation for the benefit of the farmers' institutes of the State so that the Agricultural College should not be called upon to bear more than one-half of the expenses out of this meager fund.

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The semi-weekly *Students' Herald* is evidently a success. We confess that at the beginning of the fall term, when the *Herald* announced that it would try to appear as a twice-a-week paper, we had some doubts as to the ability of the students to make the plan work. There was not only the financial difficulty to be met, but also the question of time—the time required to gather the news, to write the editorials, to read the exchanges and proofs, and to solicit advertisements and business locals. But the boys have done well. The editorials are well written and representative of the whole student body. The list of advertisements by Manhattan business men is constantly growing, and there is hardly a firm in the city that does not advertise in its columns. We should not wonder, now, if the College would have a students' daily in less than half a dozen years.

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Professor TenEyck did not buy any \$250 ears at the National Corn Exposition, but he did purchase some of the finest corn on exhibition, and more than any other purchaser. The professor purchased more than 1600 ears of corn—about eighteen bushels. He secured nearly all the premium corn in the pure-bred classes, including Silvermine, Boone County White, Leaming, and Reid Yellow Dent, and also a number of good samples in each of these classes which did not take premiums. Some of the best samples of premium corn in other classes were also secured. Most of this corn will be used by the Agronomy Department for the corn-judging work and it will be, without exception, the best lot of corn ever used for such work by students in any agricultural college. The best ears of several of the pure-bred varieties have been saved and will be planted next season in the ear-test breeding-plots on the College farm. Much of the corn placed in the judging room will make excellent seed-corn. Each sample of corn will be carefully labeled with the variety name, name of grower, address, etc. It is the plan next spring, after the judging work is over, to sell these samples to Kansas farmers at fifty cents per sample of ten ears. The varieties are Leaming, Reid Yellow Dent, Boone County White, Silvermine, Calico, and Bloody Butcher.

### Local Notes.

Lieut. Charles H. Boice and family are living at the corner of Poyntz and Manhattan Avenues.

The Library Department has just received a box of about forty new books from McClurg & Company, Chicago.

The Chemical Department received this week a portion of its supply of chemicals imported from Germany.

The North Central Kansas Teachers' Association meets at Beloit, Thursday, Friday, and Saturday, November 28, 29, and 30.

Professor Headlee is fixing up one of the wings of the old greenhouse for experiments with the green bug and other insect pests.

The pay-roll for the twenty-two teachers, the superintendent and the two janitors of the Manhattan city schools last month amounted to \$1364.50.

Mr. and Mrs. R. P. McColloch, of Anthony, Kan., visited their son Walker, who is attending College, last Monday. Mr. McColloch is associate editor of the *Anthony Bulletin*.

Assistant S. W. McGarrah, of the Department of Mathematics, has sold his interests in the *Manhattan Mercury* to Chas. M. Vernon, formerly connected with the *Salina Journal*.

Although wheat seeding was very late this fall, the favorable weather since seeding has given all winter grain an excellent start. The wheat is stooling well and will go into the winter in good condition.

Mr. Utt, assistant food analyst in the Chemical Department, was called to Lincoln, Kan., this week to testify in respect to the percentage of alcohol in certain liquors alleged to have been sold illegally at that place.

The College will have nine entries in the International Live Stock Exposition at Chicago this year. There will be four fat animals in the Shorthorn department and four fat animals and a breeder in the Aberdeen-Angus division.

Mr. E. C. Rockwell of the Dairy Department has accepted a position with the Sinton-Rustic Dairy, at Colorado Springs, Colo. His place will be taken by Mr. J. A. Langley, of Goodwin, Mo., who worked in the creamery here last winter.

The College has started work on the new fuel road running directly south from the power house to the road along the south side of the College farm. Contract has been let for an arched stone culvert over the south College creek, and it is expected to complete the road by January 1.

The Agronomy Department has added to its office equipment a large book and filing cabinet which occupies 121 square feet of wall space. Assistant Call designed the cabinet, which was made by the C. W. Horn Company, of Topeka. This is the largest and most complete filing case in the College.

First Lieut. Charles H. Boice, of the Seventh U. S. Cavalry, who was detailed a few days ago by the U. S. War Department to the chair of professor of military science at this College, recently vacated by Capt. Pearl M. Shaffer, reported for duty at the College last Tuesday. Professor Walters, in the absence of the President, introduced him to the captains of the College battalion, and the lieutenant took charge of the drill work on the campus at once. The students like the looks of the new commander. He comes to us well recommended and we have no doubt that he will be a worthy successor to Captain Shaffer, who was a very efficient soldier and teacher.

The Agronomy Department has finished husking corn. All of the seed-corn is now in the drying racks. The department will have several hundred bushels of choice seed-corn for sale, of the following varieties: Kansas Sunflower, Reid Yellow Dent, Hildreth, Legal Tender and Hogue Yellow Dent of the yellow varieties, and Boone County White, McAuley White Dent and Roseland White of the white varieties. Price of seed-corn as follows: First grade (70 pounds of ears), \$3 per bushel; second grade (56 pounds of shelled corn), \$2 per bushel; and third grade (56 pounds of shelled corn), \$1.25 per bushel. Those interested should write for circular No. 12, on Seed-Corn.

The exhibit of corn last week in the boys' contest of the Manhattan farmers' institute brought out a very large display. It was a difficult matter to tell which was the best. The thirteen boys who had the best corn will each receive \$5, provided they attend the State Farmers' Institute at the College next winter. Beside these prizes there were additional cash prizes offered by the Grange and the County Institute, which were awarded to the best exhibits. The thirteen five-dollar prizes were given by the following Manhattan business men, each contributing \$5: Supt. J. H. Miller, Fielding & Sons, J. J. Paddock & Sons, First National Bank, Union National Bank, E. A. Wharton, E. B. Purcell Trading Company, W. S. Elliot, Moore Bros. & Co., E. L. Knostman, L. R. Brady, S. N. Higinbotham, R. G. Gillett.

November 11 was a memorable day for the new veterinary science building. In the forenoon at half past eight o'clock the masons laid the corner-stone, a huge cut block of white limestone, at the east end of the south front. But there were no speeches and no ceremonies. The thermometer stood four degrees below the freezing point, and Professors Walters and Schoenleber, who watched the monolith as it sank into its cement bed, buttoned their overcoats to the top notch and shivered. Not a word was spoken except the command of the master mason who holloed for "more mort." The world has grown unpoetical and business like. Twenty years ago there would have been a gathering of students and teachers, a procession with a brass band at the head, addresses by the governor, the mayor, and the President of the College, and a banquet dripping with the fat of the land.

Professor Willard attended a meeting of the State Board of Health last Thursday, he under the law being one of its food analysts. The next day he presented a paper on "The Relation of the Kansas Food and Drugs Law to Meat and Cereal Products" before a meeting of the State, county, and municipal health officers, also in Topeka.

The last part of the Y. M. C. A. Hall is receiving its roof and the masons are at work on the cement concrete floors of the basement. The heating and plumbing pipe lines are laid and considerable work has been done by the plasterers. The building "looms up" well. It will be an ornament to that part of the city and a credit to all who have contributed to the building fund. The death of the contractor, L. D. Eversole, has not interfered with the progress of the work.

The Chemical Department, in connection with its other work for the State Board of Health, has resumed the investigation of fresh oysters. These are usually sold to western customers with an excess of water. The department has secured over thirty authentic samples from New York, Baltimore, Philadelphia, and Washington, and is making determinations of the water present in them as sold in those markets. Incidentally the question of the occurrence of copper in oysters is being investigated further. The results will be first published in the Bulletin of the State Board of Health.

Prof. David E. Lantz, formerly of this College, and for the past ten years connected with the United States Department of Agriculture, Washington, D. C., has lately published a bulletin (U. S. Biological Survey, Bul. No. 31) entitled "An Economic Study of Field-Mice." The pamphlet contains 64 pages and is richly illustrated with pen drawings and half-tones of the different species of field-mice, their burrows, nests, food stores, and habits. A main part of the pamphlet is devoted to the different methods of destroying them used in this and other countries. There is also a chapter on birds and animals who feed on field-mice, a chapter containing recommendations to the farmer with regard to inexpensive means of fighting the pest, and a chapter treating the extensive literature of classification. The research work of Professor Lantz is evident on every page, and the booklet is one of the most interesting and useful of the whole series published to date by the department.

### ***Alumni and Former Students.***

Claudia Lois Kyle was born Wednesday, November 6, at 220 Fourth street, S. E., Washington, D. C., to C. H. Kyle and Corinne (Failyer) Kyle, both of the class of 1903.

Among the visitors last Saturday were Dr. Herbert Groome, '05, Ethel Berry, '07, E. V. Hoffman, '98, Catherine Ward, '07, Flora Hull, '07, Geo. Spohr, '06, F. A. Kiene, '06, Fred Houser, '07, Clarence Kirk, '06, and Gabriella (Venard) Kirk, junior in 1907.

**FARMERS' WEEK**  
 AT  
**Kansas State Agricultural College,**  
**Manhattan, Kan., December 30 to January 4.**

**State Farmers' Institute, December 26 to January 4.**

**Monday, December 30.**

- 2:00 P. M. Boys' Corn Contest Association.  
 Kansas Butter Makers' Conference.  
 8:00 P. M. Boys' Corn Contest Association.  
 Butter Makers' Convention.

**Tuesday, December 31.**

- 8:00 A. M. Butter Scoring Contest.  
 Boys' Contest Association.  
 2:00 P. M. State Corn Breeders' Association.  
 State Dairy Association.  
 8:00 P. M. State Corn Breeders' Association.  
 State Dairy Association.

**Wednesday, January 1.**

- 8:00 A. M. State Corn Breeders' Association.  
 Inspecting Creamery and Creamery Supplies.  
 10:00 A. M. State Dairy Association Meeting.  
 2:00 P. M. State Good Roads Association.  
 Draft Horse Breeders' Association.  
 State Dairy Association.  
 8:00 P. M. Good Roads Association.  
 Draft Horse Breeders' Association.

**Thursday, January 2.**

- 8:00 A. M. Inspection of Road Making Machinery.  
 Special Judging of Stallions and Mares.  
 10:00 A. M. Good Roads Association.  
 Draft Horse Association.  
 2:00 P. M. State Veterinary Medical Association.  
 Aberdeen-Angus Association.  
 Shorthorn Association.  
 Hereford Association.  
 8:00 P. M. Cattle Breeders' Meeting.  
 State Veterinary Medical Association.

**Friday, January 3.**

- 8:00 A. M. Judging Three Breeds of Cattle.  
 Kansas State Veterinary Association (clinic).  
 2:00 P. M. Poland-China Association.  
 Duroc-Jersey Association.  
 Berkshire Association.  
 3:00 P. M. Swine Breeders' Conference.  
 8:00 P. M. Swine Breeders' Conference.

**Saturday, January 4.**

- 8:00 A. M. Judging Hogs.  
 10:00 A. M. Swine Breeders' Conference.

*Board of Instruction (concluded).*

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# THE INDUSTRIALIST

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The Industrialist.

PRES. E. R. NICHOLS..... Editor-in-Chief
PROF. J. D. WALTERS..... Local Editor
PROF. J. T. WILLARD..... Alumni Editor

TERMS AND VACATIONS.

FALL TERM, 1907, THIRTEEN WEEKS.

Thursday, Friday, and Saturday, November 28, 29, and 30..... Thanksgiving vacation
Thursday and Friday, December 19, 20..... Examination at close of term

WINTER TERM, 1908, TWELVE WEEKS.

Monday, January 6..... Examination for admission, at nine A. M.
Tuesday, January 7..... Winter term begins
Tuesday, January 7..... Short courses in agriculture and dairying begin
Saturday, January 25..... Annual intersociety oratorical contest
Saturday, February 15..... Mid-term examination
Thursday, March 19..... Annual concert
Thursday and Friday, March 26, 27..... Examination at close of term

SPRING TERM, 1908, ELEVEN WEEKS.

Monday, March 30..... Examination for admission, at nine A. M.
Tuesday, March 31..... Spring term begins
Saturday, May 9..... Mid-term examination
Tuesday, May 19..... Beginning of summer course in domestic science
Tuesday and Wednesday, June 16, 17..... Examination at close of year
June 14 to 18..... Exercises of Commencement week
Thursday, June 18, at ten A. M..... Commencement
June 19 to September 16..... Summer vacation

FALL TERM, 1908,

Wednesday, September 16..... Examination for admission, at nine A. M.
Thursday, September 17..... College year begins

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(Board of Instruction concluded on last page.)

THE INDUSTRIALIST.

VOL. 34.

MANHATTAN, KAN., NOV. 23, 1907.

No. 10

Professor Gale's Work in Manhattan and at the Kansas State Agricultural College.

The death of Professor Elbridge Gale down in semitropical Florida, reported in the last INDUSTRIALIST, recalls memory pictures that must be interesting even to those who were not fortunate enough to have come into personal contact with the kindly old man now dead and gone. The State of Kansas, the city of Manhattan and the Agricultural College owe so much to this sturdy pioneer of horticulture that his name deserves to shine among the most select of the early makers of the State.

Professor Gale began his active life as a Baptist minister. He came to Manhattan when the town, which now has over 5000 inhabitants, had scarcely 500, and the Agricultural College, which is now one of the largest technical schools of the world, was a college in name only. But the reverend was not a pulpit man. He loved out-door life too well for that. He at once acquired a tract of about 30 acres of land adjoining the town site, built himself a home, and began to plant trees and bushes. In a few years the little Gale farm became a veritable botanical garden. It was looked upon by all Kansas as the far west experiment station for horticulture and arboriculture.

In 1870 the city of Manhattan, frightened by the efforts of the friends of the State University, who wanted to remove the College to Lawrence, bought the quarter-section of land on which the College is now located, and as Reverend Gale's land formed a part of this tract he reluctantly parted with his beautiful homestead and built himself another home—the substantial stone residence now occupied by Mr. Nicholson, which he also surrounded at once with groves of fine shade-trees and pines. The large maple trees along Lovers' Lane and North College Creek, and all the old pines, cypresses, cedars and spruces were planted by his own hands, as were also the maples in the Central School yard in the city. He "preached trees" on every possible occasion and became the orchard authority of Central Kansas. At a time when all had grave doubts about the horticultural possibilities of the State he

risked every cent of his scant means and every available hour of his time with experiments for the common good.

The minister preached Sundays in his church, but during the week he practiced horticulture, and was so successful in this work that in 1870 the Board of Regents of the Agricultural College called him to the newly organized chair of horticulture and botany. Reverend Gale accepted the call without hesitation, and was now in his proper element. As a preacher he had not been an exceptional success, but as a laborer in this new vineyard of the Lord he became a power. He was a man who loved to go to church where birds and bees are preaching.

In the fall of 1873 he agitated the organization of a local horticultural society and was able to enlist the interest of a number of his neighbors in the matter. The new organization was incorporated on January 24, 1874, with Professor Gale as its secretary, and from that date till this it has been the model local horticultural association of the State. The charter members of the society were T. C. Wells, J. W. Blain, R. D. Jacobus, E. Gale, J. Flagg, R. J. Harper, R. D. Parker, and J. M. Morris. In 1877 the society had eighteen members.

On July 8, 1875, the society was divided into sections, with the arrangement that each section should present at least one subject, either in form of a paper, or report, or original investigation, or demonstration, at each of the monthly meetings. These standing committees covered the subjects of orchard, vegetable garden, small fruit, forestry, floriculture, entomology, ornithology, and drying and preservation of fruits and vegetables. Professor Gale was made chairman of the committee on forestry and was asked to publish interesting parts of the proceedings in the newly founded weekly INDUSTRIALIST. By referring to the files we find that Professor Gale was a very active contributor. During many years there appeared hardly a number that does not contain references to his work, or articles by his pen. In '75 he was active with experiments about the extermination of the grasshopper, though he was not afraid of the reappearance of the pest. He next gave much attention to the selection of the best varieties of apples for Kansas orchards, and published many articles in the Kansas press concerning his favorites. It is interesting to note that his table of the ten best varieties has not been changed to this day. Then came the question of seeding orchards with small grain or grass, and the question of orchard wind-breaks. These were followed with extensive discussions about the favorable and unfavorable qualities of the Osage orange as a hedge plant. Then came the

problems of counteracting grape blight and grape mildew, of orchard pruning, orchard cultivation, peach yellows, maple worms, currant growing, asparagus culture, and winter keeping of fruit and vegetables. In the solution of all these problems Professor Gale was a leader because he was an enthusiastic student and a keen observer.

The writer of this well remembers a discussion about pruning, held in the summer of '77. Several of the members of the Horticultural Society thought that orchards, even in Central Kansas, required considerable pruning. Professor Gale rose and said: "Gentlemen, when you go in the orchard to prune trees, stop at the well, take a cool drink and drop the pruning knife in the well. All you need to do is to rub away the suckers at the proper time."

During those days the Manhattan Horticultural Society was looked upon all over Kansas as a pattern organization. The State Horticultural Society, which was incorporated December 15, 1869, met at the Agricultural College in December, '75, and again in '83. In 1879 Prof. E. Gale was elected president of the State society, which place he held for six years.

In the spring of '78 the professor was prostrated by a severe case of typhoid malaria. He was forced for several months to abandon his work at the College. His son George, a graduate of the College, taught the classes, but it was evident that the authorities were dissatisfied with the substitute. The State has no money for a sick or worn-out teacher, no matter how hard he may have worked in his better days and how effective his work may have been. For reasons that were probably in the main of a political kind, Pres. John A. Anderson was not a friend of the enfeebled professor, and at the Commencement meeting of that year the Board asked him to resign. He was succeeded by Prof. H. E. VanDeman, a practical Kansas horticulturist, who, however, stayed but one year and resigned to accept the position of pomologist in the Division of Agriculture (now the Department of Agriculture) of the Interior Department, Washington, D. C. The reasons for the political disagreement mentioned above consisted in the fact that the two men belonged to opposite parties. President Anderson was a republican leader. He aspired to become congressman of the north Kansas district, and succeeded in 1878 in being nominated and elected, while Gale belonged to the so-called greenback party and was a prospective candidate for congress on that ticket. In the early days of Kansas political parties fought to a finish and civil service rules did not exist or were not considered of much use.

Compared with the status of modern botany and horticulture the work of Professor Gale was perhaps not highly scientific. He had had no chance to penetrate deeply into the wonderful phenomena of plant life. His own academic education was of a literary character. While a teacher at this College he had no well-equipped laboratories, no high-power microscopes, no extensive scientific libraries, no large greenhouses, and no funds to make field experiments. Like all of his collaborators of the Faculty, he taught a large variety of subjects—too many to become an expert in any line. The conditions for doing high-grade work were unfavorable, yet he did an immense amount of pioneer work of a highly practical kind when such work was necessary, and he did it with a heroic devotion—a devotion that robbed him of his health and sent him to Florida in his old days, an exile from the State which he had helped to build up. If it is true that he is a great man who makes two blades of grass grow where one grew before, Professor Gale must be ranked among the greatest of the land.

Method of Breeding Wheat.

The following correspondence concerning modern methods of cereal breeding will undoubtedly be read with interest by many of the readers of the INDUSTRIALIST. There is no more important subject before the practical western farmer to-day than that of the improvement, with regard to yield, quality, and hardiness, of the staple cereals. The Departments of Botany and Agronomy of the Kansas State Agricultural College have done much experimental work in this line, and Prof. A. M. Ten Eyck's letter to Dean J. H. Shepperd, of the North Dakota Agricultural College, is a clear-cut statement of the methods followed by the Agronomy Department in securing pure and improved strains of the best varieties:

North Dakota Agricultural College,
North Dakota, October 18, 1907.

Prof. A. M. Ten Eyck, Manhattan, Kan.

Dear Professor Ten Eyck: I am trying to secure information from men who have had experience in cereal breeding as to what breeding methods have resulted most markedly in the improvement of wheat, oats, and barley, respectively. Literature which you have published or a direct response stating what you consider the best method or methods to pursue will be appreciated. The head-row method, the centgener plan, straight selection, crossing within the strain, and straight out-crossing among the different strains and hybridizing with emmer or spelt are all questions upon which

I would like your opinion as to the importance and promise of each as a means of improvement. Also, what you think are the limitations of each as a means of improving the cereal crops which I have named.

Trusting that I may secure this information at your earliest convenience, I remain, Yours truly,

J. H. SHEPPERD,
Dean and Vice Director.

Kansas State Agricultural College.

Manhattan, Kan., November 4, 1907.

Prof. J. H. Shepperd,

Agricultural College, North Dakota.

Dear Professor Shepperd: My work in breeding cereal grains has just begun, and I am not doing much with anything except wheat. We are breeding by the "head-row" method. Our plan is to make a large selection of choice heads from the general field, taking care, as far as possible, to select heads from the best plants. These heads are carefully examined as soon as the grain is well dried and many of the inferior ones discarded. Perhaps two hundred of the choicer heads out of a thousand or more are saved, and each of these is shelled separately on a piece of white paper and the number of grains counted and quality of grain observed. If there are a relatively large number of kernels, and the grain is plump, and of good color, form, and size, the grain of this head is reserved for planting, certain records being made as to the length of head, number of kernels, color, grade, and weight of grain, etc. Finally, perhaps fifty heads are selected out of the two hundred saved, and thirty grains of each head are planted on separate, adjacent rows, one seed in a place six inches apart, in rows six or twelve inches apart. (I prefer the wider rows with cultivation.)

Various notes are taken on this grain during its growth and at harvest time. I also make a careful inspection and judgment at harvest time as to which rows are the most desirable to save. Several of the choicer plants are marked in each of these rows, and the whole product of each row is then harvested and bound together in a bundle. Several of the choicer heads from selected plants of selected rows are reserved for further study and selection to secure heads for future "head-row" planting. By carefully threshing, weighing and grading the grain, the best producers are determined.

The product of all the low producers is discarded, while the product of a few of the best producers is reserved and the grain planted in separate plots or in combination, for increase.

Only a few heads of the best-producing rows are planted in the "head-test" the next season, but a large selection of heads is again made from the field as described above.

This method of breeding wheat or any other grain does not aim to train the grain or improve it by a long process of breeding and selection; rather, it aims to discover the great individuals which at once, merely by separation, may become the foundation stock of a pure and improved strain or variety.

I have completed only one "head-test" with seven different varieties of wheat and barley, but the results are remarkable. With Kharkof wheat, for instance, the yield varied from less than one hundred grams to more than four hundred grams per "head-row," while the grade of the grain from the several "head-rows" varied all the way from *soft and rejected* to *No. 1 hard red*.

I am convinced that this method of breeding, which is really a method of discovering the great individuals, is far preferable to the centgener method, and the results are much greater and are secured much more quickly.

By the "head-row" method of breeding, if the product of a single great-producing head of wheat is planted each year and yields at the rate of thirty bushels of grain per acre, there will have been produced 2700 bushels of wheat of the improved variety in four years after the first "head test," which discovered the great producer.

I prefer "straight selection" as described above. I do not think it necessary to carry on artificial crossing within the strain, as sufficient crossing doubtless takes place naturally. Selection discovers the great individuals, and it will be observed that this plan of selecting from the field gives the opportunity of choosing the best heads from among thousands of individuals, and thus the chance of securing a great individual is much greater than by the centgener method, which starts with comparatively few plants which become the foundation stock, from which future selections are made, largely with the idea of improving the grain by long years of careful training rather than by the discovery of great individuals which may at once become the parent stock of pure and greatly superior strains of the variety. I doubt the efficiency of out-crossing between different varieties of wheat or hybridizing with emmer or speltz, unless this crossing is done with a definite object in view. For instance, a certain variety of wheat may be a great producer, but the chaff does not hold the grain well. By crossing such a variety with a variety having tighter glumes, it may be possible to produce individuals having the desirable

characters of both of the parent plants, and these individuals may become the foundation stock for a new and improved variety.

The work of crossing and selection to produce new varieties is in the charge of the Botanical Department of this Station, the work of the Agronomy Department aiming only to secure pure and improved strains of the established and best-producing varieties, with the purpose of propogating the more desirable selections as rapidly as possible and distributing this pure and improved seed grain among the farmers, since the ultimate purpose of plant breeding is that the people may profit by the growing of grain of better quality and greater productiveness.

Very truly yours, A. M. TENEYCK,

Professor of Agronomy, Kansas State Agricultural College.

The Kansas State Corn Show.

The Third Annual Meeting and Corn Show of the Kansas Corn Breeders' Association will be held at the Kansas State Agricultural College, Manhattan, December 31, '07, and January 1, '08. From present indications this will be the largest and most successful meeting in the history of the association, and a full attendance is desired. Premiums will be awarded in the following classes:

- Class A. — Largest yield of corn per acre, three prizes.
- Class B. — Best ten ears of yellow corn, five prizes.
- Class C. — Best ten ears of white corn, five prizes.
- Class D. — Corn not included in the above, two prizes.
- Sweepstakes. — Best ten ears of corn in the show, five prizes.

The rules governing the farmers' contest are as follows:

1. All samples of corn exhibited for prizes shall become the property of the Kansas Corn Breeders' Association.
2. Only corn grown in Kansas during the season of 1907 may compete for prizes. The contests are open to all Kansas farmers.
3. All corn must be delivered to the secretary, Prof. A. M. TenEyck, express or freight prepaid, by 1:00 P. M., December, 31, 1907.
4. Samples should be carefully marked with name and address of grower and class in which corn is entered for premium.
5. All corn should be carefully wrapped to prevent shelling, and should be tightly packed in a strong box for shipment.
6. No exhibitor shall make more than one exhibit of the same variety of corn in a single class.
7. No corn shall be shown in more than one class, except that all samples or exhibits compete for Sweepstakes prizes.
8. All entries in Class A shall be made by November 15, 1907. The yield of corn shall be determined by weight, from a

measured acre of land, and one bushel of ears, which shall be a fair sample of the corn produced on the acre, shall be sent to the Agronomy Department of the Kansas State Agricultural College, together with the weight of the sample as determined on the same day that the remainder of the corn is weighed. All the above measurements, weights, etc., shall be made by some competent person appointed by the Agronomy Department, with the assistance of the owner of the corn, both of whom shall make affidavit that all measurements, weights and everything connected with the contest is fair and according to the rules of the contest, to the best of their knowledge and belief. The Agronomy Department shall make determinations of the percentage of shelled corn and percentage of moisture in all samples sent in, and all yields shall be figured to an equivalent yield of shelled corn containing fifteen per cent of moisture, as representing air-dry corn.

9. Each contestant shall furnish a written statement of the kind of soil upon which the corn was grown, kinds and amounts of fertilizers and manures used, methods of planting and cultivation, and other data which may be of general interest.

10. Exhibitors and visitors may inspect the samples, but shall not handle the corn on exhibition, which is entered for prizes.

During the two days' annual meeting, addresses will be delivered by prominent corn breeders and specialists of Kansas and adjoining states. This meeting is one of the features of the State Farmers' Institute, December 26, '07, to January 4, '08. For information regarding the State Farmers' Institute, address Supt. J. H. Miller, Manhattan. For information regarding the corn show of the Kansas Corn Breeders' Association, address the acting secretary, Prof. A. M. TenEyck, Manhattan.

Institute Pamphlets.

While the Kansas State Agricultural College and Experiment Station has contributed many valuable bulletins, results of experiments in agronomy, animal industry, and in other lines of work, it has not issued any purely information or advisory publications. The need of several such works or pamphlets becoming evident, the Board of Regents has approved the publication of a series to be known as the farmers' institute series, to be furnished free to all regular and paid-up members of the several farmers' institute organizations in Kansas.

The numbers to be published during this year are: "Swine," "Farm Dairying," "Poultry on the Farm," "Sheep," and "The Farm Horse." Others will be added to the series as there seems

to be a need and a demand. These numbers will be mailed, as issued, to members of farmers' institutes, lists to be furnished by each secretary; also, to members of the Boys' Farming Club and members of Demonstration class. The price to others will be twenty-five cents per copy, postpaid. Copies may be obtained by writing to J. H. Miller, superintendent of farmers' institutes and College extension, Manhattan, Kan.

Number 1 of this series is now ready for distribution. It treats the important subject of Swine Husbandry. It gives the history of the animal, its breeds, feeding, care, and management. The pamphlet is a neat little book of 62 pages, full to the brim with valuable points concerning this important branch of animal husbandry. It was prepared by Geo. C. Wheeler, assistant professor of animal husbandry, who has had personal charge of the College pens for several years.

Corner Stone Laying.

Amid a throng interested in the development of veterinary science the "corner stone" of the finest veterinary building in America was laid last Saturday afternoon. With a few chosen words Doctor Schoenleber placed beneath the stone laid by Architect Spuhler a copy of the 1907 K. S. A. C. catalogue, a copy of the legislative act appropriating the money for the construction of the building, the photographs of the present Board of Regents, the veterinary faculty, and the members of the first three graduating classes in veterinary science at K. S. A. C., together with a copy of the legislative act regulating and protecting veterinary practice in the State. Each member of the veterinary faculty and the president of the Veterinary Medical Association made appropriate remarks. All went away feeling that nothing is too good for Kansas.

A correspondent of the *Topeka Journal* writes from Minneapolis, Kan., that the farmer's institute and corn-growing contest at that place, held November 7, was a big success. Among other things he says: "There were seven prizes given in the boys' corn contest. The first prize was won by Ora Starkey, a boy living southeast of Minneapolis. Five of the boys that won prizes will be sent to Manhattan in December free of cost to themselves to attend a series of lectures. In the girls' bread contest, Ruth Fitch won first prize of \$2. Institute Superintendent J. H. Miller of the Agricultural College gave a splendid lecture on Monday afternoon; also Prof. R. J. Kinzer, of the same institution."

Local Notes.

The fall term will close Friday, December 20.

The sub-freshmen had a class party in Kedzie Hall on Monday night.

The senior girls appeared in light blue mortar-board caps on Saturday morning.

The Horticulture Department is banking dirt around the new cement walks and picking up the stone debris left by the sidewalk contractors.

Professor Headlee went to Lawrence, Monday, to consult with Professor Hunter, of the State University, regarding the work of the State Entomological Commission.

Mrs. Lydia Willard, wife of Prof. J. T. Willard, was elected recording secretary of the Kansas Federation of Woman's Clubs, at their annual meeting at Marysville last week.

Civil Engineer W. G. Russell, of El Paso, Tex., who commenced the survey for the Rocky Ford dam, but was compelled to return home on account of illness, has returned to continue his work.
—*Mercury*.

A hard-fought gridiron battle in the Manhattan Athletic Park, on November 18, between the Kansas State Agricultural College and Fairmount College, resulted in a victory for the Farmers with the score of 10 to 6.

The Franklin and Eurodelphian societies have just placed a large new rug in their society hall, and are contemplating other improvements which will help to make this the best society hall in College.—*Students' Herald*.

The Mechanical Engineering Department has prepared for testing four floor slabs of cement concrete, using the same reinforcement and mixture as were used on the Kaw river bridge, recently refloored by the Canton Bridge Company.

The city of Manhattan consumed a total of 5,829,124 gallons of city water from October 15 to November 15, or an average of 1000 gallons per inhabitant. Twenty-two new residences were connected with the city water system during this period.

President Nichols was absent all of last week on an official visiting tour with a committee of the State Board of Education. The Board visited the Salina Wesleyan University, Bethany College, at Lindsborg, McPherson College, Cooper College, at Sterling, and Emporia College.

As in former years, there will be a short Thanksgiving vacation. College will be in session Monday, Tuesday and Wednesday of next week, but from then until the Tuesday following there will be no class work, giving the students an opportunity to spend Thanksgiving at home. Those who stay here on Friday and Saturday will find the shops, laboratories and the library open and warm as usual.

Professor McCormick has received a letter from a firm of engineers at Portland, Oregon, asking to send them the name of a graduate of the College to act as their representative in the State of Kansas. The salary which they are willing to pay will range upward of \$125 per month.

The Kansas Academy of Science will meet at Emporia on November 28, 29, and 30. A number of professors and assistants from this College will attend the session. The preliminary program mentions a paper on tuberculosis to be presented by Asst. B. R. Rogers, of the Department of Veterinary Science.

Col. Henry Watterson, editor of the Louisville *Courier-Journal*, lectured Tuesday night in the Auditorium on Abraham Lincoln. Although the night was disagreeable a throng that filled the immense College Auditorium turned out to hear "Mar's Henry," and were well entertained by the great editor's able address.

The class of '08, by permission of the President, placed a class stone in the front of the second story of the new Domestic Science Hall last Tuesday. The stone bears the simple message "Class of 1908." The block was not molested, nor its insertion into the walls disturbed. The students of the Agricultural College show a degree of solid sense in such matters that seems to be totally absent in many colleges, denominational as well as secular.

Doctor A. Learned, of Boston, Mass., lectured in the old chapel Friday afternoon to a select audience of Faculty members, students, and citizens. The doctor is a specialist on insomnia, and his lecture consisted in the main of a demonstration of his treatment, which is purely hygienic. It consists of pure air, plenty of out-door exercise, and wholesome food. In acute cases, when the patient is in bed, he uses rythmical foot movements, together with slow counting.

The Printing Department ran off a series of large, colored posters for 24 different farmers' institutes last Thursday. It is now at work on a very handsome three-color calendar for next year for the College Y. W. C. A. The calendar will consist of twelve large plates, illustrated by original drawings made by students of the Department of Architecture and Drawing, and half-tones of College views. The plates will be tied together by handsome silk cords and will form an artistic and convenient office or home calendar.

Friday evening Messrs. Morton and LaShell, government surveyors, were in town. They are making the preliminary survey for the proposed military road between Fort Leavenworth and Fort Riley. They are running the levels, noting the nearness and accessibility of stone, and collecting other data to be used in formulating the bill to be introduced into congress at this session. They have three routes between Leavenworth and Topeka to investigate, but from Topeka up they have kept on the north side of the river. Saturday they began working out of town and over the hills toward Fort Riley.—*Manhattan Enterprise*.

Alumni and Former Students.

Mr. and Mrs. Fred Wilson, of Phoenix, Ariz., are the parents of an eight-pound boy, born Monday. Mrs. Wilson is a daughter of Dr. and Mrs. T. R. Cave, of this city. The doctor is now wearing a smile that won't rub off.—*Republic*.

Elenore Perkins, '00, South Pasadena, Cal., with her mother has been visiting their old homes in different parts of the State, including Manhattan. She finds the College much changed and the football crowd a sea of strangers. She reports that there are many of the College family in their part of the state and that they have great hopes of a strong alumni organization. Her sister Edith, '00, with her husband, Fred Myers, senior in 1901, and the little Myers, live near her and are prosperous and happy.

J. R. Coxen, '07, with four other Kansas men, had the misfortune to lose his position as an apprentice with the Westinghouse Company as a result of the financial stringency which threw that company into the hands of receivers. The most recent employees were laid off with little prospect of being taken on again until spring. In the meantime Mr. Coxen has secured a desirable position with the auditor of freight accounts in the general office of the Pennsylvania Company, Union Station, Pittsburg. He began work November 18.

Mrs. J. E. Cooper [junior in '85] died Sunday morning, death resulting from nervous prostration. She had been very ill for some days, and for the past week it was apparent that death was not far off. She was buried Monday afternoon from the residence, Reverend Fisher conducting the funeral services. Nellie Burroughs was born about forty-two years ago. When a child she was adopted by Mr. and Mrs. Judge Harper, and as Nellie Harper she grew to young womanhood in Manhattan, attending school and College here, and was one of the most popular of Manhattan girls. She was married to J. E. Cooper, and there were born two children, Misses Allan and Kate Cooper. Mrs. Cooper was one of the most popular and original women in Manhattan. She belonged to the T. P. M. Club and was a leader in the club work. Her life was full of joy and helpfulness to others. Her home life was charming, her heart was always young and filled with the love of giving and doing. She will be greatly missed by a very wide circle of friends, all of whom join with the bereaved husband and children in mourning her early death.—*Republic*.

Prof. Albert Dickens, '93, is adding to the already varied experiences of his life by a farmers' institute tour in the extreme southwestern part of the State. He finds that the graduates and former students may be found almost anywhere, even in the uttermost railroadless counties. His loyalty to this department of the INDUSTRIALIST is not excelled by any one, and he has taken the trouble to send in the following items concerning some of those whom he has met:

At Lakin I found M. E. Bacon, student in 1900, who is in charge of the drug store at Deerfield.

At Johnson, Glenn Buckman, student in 1906-'07, is holding down a claim in southern Hamilton county.

C. A. Way, short course 1903, is cashier of the new State bank at Garden City. He also is married and happy.

J. M. Wheeler, student in 1895, is town-site manager at Liberal, and his brother, Frank Wheeler, same date, is prospering on a farm.

At Ulysses, Dan Sullivan, senior last year, has just arrived from the stock inspection work in New Mexico. He will be in College next term.

At Santa Fé, Paul Davis, student last year, is relieving his father of some of the work and worry on the farm. He hopes to be in College next year.

At Garden City, Guy Norris, sophomore in 1895, is assistant chemist at the United States Sugar and Land Company's sugar factory. He reports life being rosy-hued. Mrs. Norris and the baby seem to think so too.

At Ashland, W. H. Purdy, sophomore in 1900-'01, salesman for the McKaskey Register Company, tells of the prosperity of himself and wife, Jean Day, remembered by many as the small sister of Laura Day, '93. Their home is in Wichita.

At Richfield, C. M. Dole, student in 1901-'02, is a claim holder and enthusiastic over the possibilities of the southwest. His sister Emma, student in 1902, has proved up her claim and is at home, keeping house for her father, at Dolespark.

At Cimarron, Roscoe Good, short course 1903, and Charles Bull, short course 1904, managed the meeting and furnished part of the program. Both are prosperous. Live stock, alfalfa and wheat are their means of securing the almighty dollar.

At Syracuse I enjoyed the hospitality of Olga (Huber) Rees, second-year student 1893. Mr. Rees owns a large tract of land under the ditch, and raises immense crops of alfalfa; he sells some real estate and makes loans on the side. Mrs. Rees has a large fine home and four small chaps—three boys and a baby girl—on her hands.

At Hugoton, M. A. Reeve, senior in 1882 and acting superintendent of the shops in 1882-'83, and his wife, Cora M. (Hunting) Reeve, student in 1882, were interested inquirers concerning the growth of K. S. A. C. Failing health induced their removal from Lyon county and the hope of recovery has been more than realized. They mention a grandchild, two married sons, and a daughter who is teaching, and have great hope of their farm near Travers, Stevens county.

At Liberal, Dr. Roscoe T. Nichols, '99, took time to drive us about thirty miles to inspect some of the good farms of his county. He also cheered the pilgrim in a most acceptable way by an opportunity to sample Mrs. Nichols' high-class cookery and play with the two small Nichols, and by a Sunday dinner at the home of his wife's uncle, on his ranch west of town. I get an idea of the reason for the doctor's promptness when he drives in nine miles in forty-five minutes to get me to my train.

Board of Instruction (concluded).

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| PRES. E. R. NICHOLS..... | Editor-in-Chief |
| PROF. J. D. WALTERS..... | Local Editor    |
| PROF. J. T. WILLARD..... | Alumni Editor   |

## TERMS AND VACATIONS.

### FALL TERM, 1907, THIRTEEN WEEKS.

Thursday and Friday, December 19, 20..... Examination at close of term

### WINTER TERM, 1908. TWELVE WEEKS.

Monday, January 6..... Examination for admission, at nine A. M.  
Tuesday, January 7..... Winter term begins  
Tuesday, January 7..... Short courses in agriculture and dairying begin  
Saturday, January 25..... Annual intersociety oratorical contest  
Saturday, February 15..... Mid-term examination  
Thursday, March 19..... Annual concert  
Thursday and Friday, March 26, 27..... Examination at close of term

### SPRING TERM, 1908, ELEVEN WEEKS.

Monday, March 30..... Examination for admission, at nine A. M.  
Tuesday, March 31..... Spring term begins  
Saturday, May 9..... Mid-term examination  
Tuesday, May 19..... Beginning of summer course in domestic science  
Tuesday and Wednesday, June 16, 17..... Examination at close of year  
June 14 to 18..... Exercises of Commencement week  
Thursday, June 18, at ten A. M. .... Commencement  
June 19 to September 16..... Summer vacation

### FALL TERM, 1908,

Wednesday, September 16..... Examination for admission, at nine A. M.  
Thursday, September 17..... College year begins

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| MRS. HENRIETTA W. CALVIN, B. S. (K. S. A. C.).....                                      | Professor of Domestic Science                      |
| RALPH R. PRICE, A. M. (U. of K.).....                                                   | Professor of History and Civics                    |
| JULIUS E. KAMMEYER, A. M. (Central Wesleyan College).....                               | Professor of Economics                             |
| CHAS. H. BOICE, First Lieutenant Seventh Cavalry, U. S. A.....                          | Professor of Military Science                      |
| JOHN V. CORTELYOU, A. M. (Uni. of Neb.), Ph. D. (Heidelberg).....                       | Professor of German                                |
| OLOF VALLEY, B. M. (Chicago Conservatory).....                                          | Professor of Music                                 |
| F. S. SCHOENLEBER, D. V. S. (Chicago Vet. College).....                                 | Professor of Veterinary Science                    |
| ROLAND J. KINZER, B. S. A. (Iowa State College).....                                    | Professor of Animal Husbandry                      |
| WALTER E. KING, M. S. (Cornell).....                                                    | Professor of Bacteriology                          |
| THOMAS J. HEADLEE, Ph. D. (Cornell).....                                                | Professor of Entomology                            |
| JOSHUA D. RICKMAN.....                                                                  | Professor of Dairy Husbandry                       |
| MISS MARGUERITE E. BARBOUR (Sargent Nor. Sch. Phys. Tr.), Director of Physical Training | Superintendent of Printing                         |
| MISS ANTONETTA BECKER (Drexel).....                                                     | Superintendent of Domestic Art                     |
| MISS ANNE M. BOYD, A. B., Lib. Sci. (Millikin).....                                     | Librarian                                          |
| ROBERT J. BARNETT, B. S. (K. S. A. C.).....                                             | Principal Preparatory Department                   |

(Board of Instruction concluded on last page.)

# THE INDUSTRIALIST.

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No. 11

## *The College Secret Societies.*

There are to-day at least five Greek Letter Societies at the Kansas State Agricultural College, three of them being fraternities and two sororities. They have an active, resident membership of about twelve each, but several of these are not attending College.

It is a difficult matter justly to evaluate these societies as college organizations, especially here where the situation is somewhat unique. We rank somewhere between the high school and the standard college. Our students have not as a rule had the advantages of the conventional high-school course, but have substituted therefor the sub-freshman work here.

*High-School Fraternities Outlawed.*—The high-school secret societies of the country appear to be doomed to ignominious dissolution. First, the National Educational Association, in 1905, pounced upon them and condemned them roundly, "because they are subversive of the principles of democracy . . . ; are selfish and tend to narrow the minds of pupils . . . ; are snobbish . . . ; tend to dissipate energy and proper ambition . . . ; inculcate a feeling of self-sufficiency among their members . . . ; are expensive and foster habits of extravagance . . . ; detract interest from study."

Following these resolutions many principals and city superintendents joined in the attack. Out of 185 high-school principals interviewed by letter only three regarded the fraternities with any favor, while 128 denounced them in unqualified terms. These are some of their characteristic statements: "They are thoroughly pernicious in their influence." "They are apt to degenerate into smoking and gambling clubs on the part of boys, and frivolous, gossipy, idle places on the part of girls." As a result of all this denunciation, many cities and some states have passed laws forbidding all such organizations in connection with high schools. Kansas recently enacted such a law.

*Conditions in Other Colleges.*—The college fraternity spirit appears to be strongest in the East, many of the student bodies there being dominated by them. At Bowdoin 91 per cent of the men be-

long to eight fraternities, and they have \$173,000 worth of property. While these organizations differ widely in the personnel of their members, many of them are regarded by the faculties as being instruments of good and helpfulness to the college community. Others are considered inimical to the well-being of the college to which they are attached.

It is somewhat significant that President Seelye, of Smith College (for women), has recently written a trenchant criticism of sororities. Among other things of like character he says: "The members of the society are lead to consider primarily the needs of the little coterie to which they belong. . . . The societies give rise to the most disturbing and belittling factions of college life."

On the other hand, Mr. C. F. Birdseye, a college alumnus, and a lawyer of considerable distinction, has written a notable book, \* one-third of which is devoted to the favorable consideration of fraternities. Mr. Birdseye characterizes these societies as "The answer of the students to the problem of finding at least a partial substitute for the college home life which came from the former personal touch of the instructor—a problem which the faculties have confessed themselves quite unable to solve. . . . They contain the very elements that, misunderstood or misguided, can make the most trouble and do the most harm. But they contain also many of the stronger men of our institutions, . . . who control college activities and mold college opinions. If we abandon them to their own devices, they are capable of almost any harmful results. If we lift them to the levels they can reach, we have the most available and powerful instrument for good in the college lives of our students."

The author then proceeds to draw up a plan whereby these organizations may be made to render such efficient service. Among other things he shows how a general secretary may be employed to give his time to a group of several colleges. I wish the fraternities would place this book in their libraries.

*Local Conditions.*—During the current term I have been gathering data with reference to the secret societies in the College here. The grades given below are those of one term last year. A circular was addressed to all the instructors for that term asking for records of attendance of these students and inviting comments upon their scholarship. Only about one-half of the instructors responded. The records are therefore incomplete, excepting the term grades.

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\* "Individual Training in Our Colleges," C. F. Birdseye, The Mac Millan Co.

| Report of Condition of Five Greek Letter Societies in the Kansas State Agricultural College. <i>d.</i> | Average age..... | Average grade for one term..... | Low grades and failures ( <i>a</i> )..... | Low grades and failures ( <i>b</i> )..... | Absences reported by only ½ the instructors ( <i>c</i> )..... | Report of 24 out of 60 Instructors. |                    |                   |
|--------------------------------------------------------------------------------------------------------|------------------|---------------------------------|-------------------------------------------|-------------------------------------------|---------------------------------------------------------------|-------------------------------------|--------------------|-------------------|
|                                                                                                        |                  |                                 |                                           |                                           |                                                               | Good or Excellent..                 | Fair or medium.... | Poor or weak..... |
| Fraternity X.....                                                                                      | 21               | <b>78.8</b>                     | 25                                        | 15                                        | 107                                                           | 4                                   | 11                 | 8                 |
| Fraternity Y.....                                                                                      | 20               | <b>74.3</b>                     | 27                                        | 26                                        | 81                                                            | 5                                   | 3                  | 15                |
| Fraternity Z.....                                                                                      | 19               | <b>67.9</b>                     | 27                                        | 12 <sup>c</sup>                           | 169                                                           | 1                                   | 3                  | 19                |
| Summary of three fraternities.....                                                                     | 20               | <b>73.7</b>                     | 79                                        | 53                                        | 357                                                           | 10                                  | 17                 | 42                |
| Sorority M.....                                                                                        | 20+              | <b>90</b>                       | 0                                         | 2                                         | 61                                                            | 10                                  | 1                  | 2                 |
| Sorority N.....                                                                                        | 19+              | <b>82.7</b>                     | 7                                         | 7                                         | 34                                                            | 10                                  | 4                  | 8                 |
| Summary of two sororities.....                                                                         | 20—              | <b>86.4</b>                     | 7                                         | 9                                         | 95                                                            | 20                                  | 5                  | 10                |

*a.* For one term, year 1906-'07.

*b.* Mid-term examination, November 2, 1907.

*c.* At least one-half of these are out of College at present.

*d.* The number of members in each organization was 10 to 12.

The fraternity boys here, as a rule, dress better than the average young man in College. They have rather a "smart" and knowing look; they often swagger a little in their walk, and affect a few other conspicuous mannerisms that enable one to classify them almost at a glance. They are also inclined to assume an air of pride and superciliousness toward those students who do not belong to their circle—all of which is foreign to their real natures. In fact, nearly all these marks of distinction are recently acquired affectations, for a majority of these young men belong to splendid Kansas families, and they have been reared in an ordinary democratic society. In his personal relations with them, the writer of this article has always found them extremely polite and courteous and otherwise exemplary in their conduct.

So far as can be ascertained, the fraternity members have little or no relations with the Y. M. C. A. or the College literary societies, but they take a creditable interest in athletics. They may be "snobbish," and "clannish," and "undemocratic," and "exclusive," all of which may be objected to merely on sentimental grounds; but it seems to me that the college authorities have an unquestioned right to require of them only two things, viz., creditable scholarship and reasonably exemplary conduct. That many of them are lacking in the first quality, the accompanying table will bear witness that they come far short of the second mark, I have much hearsay but little or no direct evidence. Nearly all of these young men, however, are either occasional or habitual smokers—a practice that is at least detrimental to scholarship.

There is something attractive about the life within these secret societies. Their fundamental ideas—fidelity, mutual sympathy

and helpfulness—are beautiful and sound to the core, but they do not include all of life, and they ought not to be incompatible with plain, common-sense conduct and high-class scholarship. At least one of these fraternities ought to reform its ways at once or disband and go out of business. Its members are apparently, with few exceptions, a set of failures as students. Many of them have been either suspended from College or conditioned. The other two young men's societies are making a very poor showing. They ought to average ten per cent higher.

To an outsider, the apparent crying need of these somewhat youthful associations is (1) that each of them have among their number, as Mr. Birdseye suggests, at least one member of well-developed character and mature scholarship, who has high ideals for them and who can wield a dominating influence over them. (2) There must be more carefulness in the selection of new members. The latter should be young men who have proven their worth in scholarship as well as in money and social qualities. Out of nine new members initiated since College opened eight are recorded on the mid-term low-grade and failure list *twenty-two times*. Thus the burden of delinquents that must be carried by each of these fraternities is heavily increased. What a commendable piece of work it would be if these delinquents were taken in as members with the thought of coaching them and bringing them up to a high standard of efficiency as students. But such seems not to have been a purpose.

A third suggestion is that there be carefully made out for every day of the week a program in which specific times are given to work, study, recreation, and amusement, and that a strict penalty be exacted for every deviation from it. These three suggestions, if faithfully carried out, will in time win for the fraternities hearty applause instead of the wholesale condemnation which they are now receiving.

Of the two sororities here, little may be said except by way of commendation. One of them especially is composed of some of the brightest and most attractive young women in College. It is doubtful if there could be found another equal sized group of students that would surpass them in scholarship. The other one is less fortunate, in that it has a few members who are very indifferent students. Several of the members of both take active part in the work of the Y. W. C. A. On the adverse side, it is often charged that the members of these sororities are too exclusive in their friendships, and that they have too many expensive social functions.

W. A. MCKEEVER.

***State Farmers' Institute.***

The Kansas State Agricultural College offers a nine-day school for men and boys and women, December 26, 1907, to January 4, 1908. Among the many movements for the education of farmers none is more unique than the State Farmers' Institute at Manhattan. The announcement is now being made for the second annual institute. It differs from others in being devoted to actual drill in judging grain and stock and in handling farm machinery and dairy apparatus for boys and men, and in actual instruction in cooking and sewing for women and girls.

Six courses are offered: (1) Stock Judging, (2) Corn Judging, (3) Poultry Judging, (4) Dairy Testing, (5) Cooking, (6) Cutting and Draughting Women's Clothing. The work will be arranged so boys and men may take either one and two or three and four, and all women and girls will be expected to take both five and six. In special cases one may devote the whole time, however, to either five or six.

Work in courses one to four will begin promptly at 8 o'clock Thursday morning, December 26, and students will be kept busy eight hours a day for the first four days, but from December 31 to January 4 only four hours a day will be required, two hours to each of the two courses chosen. The afternoon and evening may then be devoted to attending some of the many State Conventions being held at the College that week. The women's work, courses five and six, will begin on Monday afternoon, December 30, 2:30 o'clock, at the Domestic Science Hall, ending with all other courses at noon, Saturday, January 4.

This institute will be during the College vacation and people will be boarded in the many regular boarding-houses. Men who attend only for one or two days, for one or more conventions, will be accommodated at the hotels at the regular hotel rates.

One of the most interesting features of this State Institute will be the attendance of about 400 boys, twelve to eighteen years of age, who are to be sent here, all expenses paid by county institutes, commercial clubs, and public-spirited men. These boys have all won out in their several home counties in corn contests, and the prize is the trip to the State Institute. For example, the farmers' institute of Bourbon county sends ten boys, paying all expenses, the fund being contributed mainly by the Fort Scott business men. At Independence Mr. W. T. Yoe, editor of the *Tribune*, had a boys' corn contest of his own and will send five boys to the institute. Out at Kinsley the farmers' institute sends four boys, the commercial club will send two, and two public-

spirited men, Messrs. Edwards and West, will send two. The Salina Commercial Club will send eighteen, the Junction City Commercial Club twenty-three, the Clay Center and McPherson Commercial Clubs, each eighteen, the eleven banks of Wabaunsee county will send eleven boys and the County Institute will send nine, and so on all over Kansas are the banks, commercial clubs, farmers' institutes, and public-spirited men contributing to this great movement for the education of the boys and girls of the farm. These boys will begin work at Manhattan at 8 o'clock Thursday, December 26, and their work will not end until Saturday noon, January 4, 1908. This work is under the direction of the Extension Department of the Agricultural College, J. H. Miller, Superintendent, to whom all correspondence regarding it should be addressed.

### ***An Alfalfa Day.***

Kansas is to have an "Alfalfa Day," December 14. J. H. Miller, superintendent of farmers' institutes at this College, has issued the call. Mr. Miller hopes, by this special observance, to bring about a more general understanding of this great crop, of which Kansas now has three to four million acres. Alfalfa has had a place on the program of almost every farmers' institute held in Kansas since October, 1905, and now it is to be the sole topic for 250 meetings to be held all over the State on the same day and in the same two hours.

The discussion will touch on all matters pertaining to seed and seed-beds, cutting and storing. County institute officers of each county are requested to announce meetings for that day, not only in the county seat, but for two or more other points in the county, to be presided over by the vice-presidents or by others appointed for that purpose.

The meetings are to be called at 1:30 o'clock and adjourned at 3:30 o'clock. Out of the discussion by 10,000 Kansas farmers and the later publishing of accounts of these meetings in several hundred Kansas newspapers much good will come, it is believed.

The Kansas press has joined heartily in the call by Superintendent Miller. Dozens of short and long articles have appeared the past two weeks commending the plan. The *Topeka Capital*, the *Kansas City Star*, the *Topeka Journal*, the *Wichita Beacon* and scores of other dailies, weeklies and farm papers are boosting the idea with enthusiasm. It is bound to succeed.

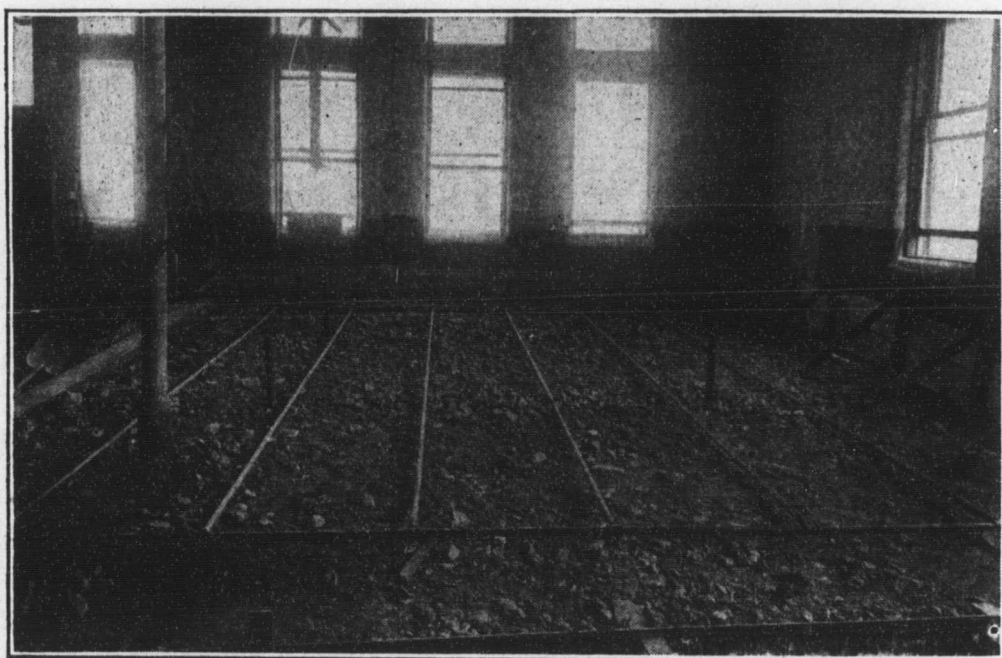
In a recent issue the *Kansas City Star* says: "The suggestion for an "Alfalfa Day" in Kansas, to be observed December 14,

should meet with popular approval in that State. Kansas has one or two special holidays, but "Alfalfa Day" should easily eclipse all others in the matter of public interest, not excepting "Kansas Day" as celebrated by the politicians. For alfalfa really "saved the day" for Kansas. It was first introduced as a substitute for wheat and corn in the "semi-arid" territory along the Arkansas river valley, where it served as pasture in the grazing season, hay and "roughness" in the winter, while the seed threshed from the grain at harvest time supplied the financial necessities of the farmer and his family. It was not possible to limit a product of that kind to the "dry belt," for it has proved quite as profitable in Eastern Kansas as in the western part of the State. A grain that will produce three crops in a single season, and any one of them of a greater cash value than the same amount of wheat, or oats, or corn, is entitled to "a day" for consideration. The Kansas farmers are looking for net profits now. They have passed the experimental stage in tilling the soil, and alfalfa really appears to be all profit after the first seeding. The value of its present yield added to the increase in the Kansas bank deposits last year in the sum of ten million dollars from less than one million acres, which appears to be a reasonable return upon the actual investment above all fixed charges, taxes, and operating expenses."

Alfalfa is the Cinderella of the staple crops of America. According to a recent report on the farm crops of the United States, Secretary James Wilson, of the Department of Agriculture, says: "The value of the alfalfa crop as hay this year is supposed to be 100 million dollars, and if the plans and efforts now under way to promote its extension receive a reasonable reward the value of the future crop will be several times the present amount. This forage plant is a chemical laboratory in which nitrogen is taken from the air. It is a soil improver of the highest merit. As a flesh-forming feed for growing live stock, and as a milk and egg producer, it is unexcelled by any plant of large production. It grows two and one-half tons of hay to the acre as an average for the whole country where it is grown, or twice the average for all kinds of hay, and, besides this, is more nutritious than other hays. The cultivation of alfalfa has been pressing eastward until now it has established itself as far as the longitude of Eastern Kansas, except in Southern Texas. It is now established in some areas still farther to the eastward—in spots in Arkansas, in Southern Wisconsin, Northern Illinois and Northern Indiana, in the limestone regions of Kentucky and Tennessee, and in the southeastern corner of Michigan."

***Cement Floors for Creameries and Cheese Factories.***

For many years creamery sanitation has been a question of vital importance to the dairyman. To secure this one of the most important projects is the installation of a perfectly close floor with proper connection to the sewage system. Cement floors have proved to be the best in this, but considerable complaint has been made on the ground that the butter maker frequently contracts rheumatism and is forced out of the business. This also had a tendency to prevent some from going into the creamery work. This proves a menace to the business.



How the steam pipes were laid.

To overcome this the Dairy Department of the Kansas State Agricultural College has been conducting experiments during the past season, and has been successful, a new cement floor having been installed with the system of one-inch steam pipes laid under the concrete in such a way as to infuse heat through the cement, rendering the floor warm and dry. This experiment has been thoroughly tested during the past month, and thus far has given absolute satisfaction. The expense of heating is very small, as once the floor is warmed up it requires very little steam to maintain a uniform temperature.

This system of heating may well be considered by stockmen. Further experiments along this line will in all probability be conducted at the Kansas State Experiment Station during the coming year.

**Local Notes.**

Alfalfa day, December 14.

The fall term will close December 20.

The new Greenhouse is receiving its glass roof.

The winter term will begin on Tuesday, January 7.

The Riley county teachers meet to-day (Saturday) at Leonardville.

The Franklin Literary Society gave a party at the city skating rink, November 29.

The short courses in agriculture and dairying will begin on Tuesday, January 7.

The fall term examinations will be held on Thursday and Friday, December 19 and 20.

The examinations for new students will be held on Monday, January 6, at nine o'clock A. M.

The stone bridge over south College creek, for the new coal road to the heating plant, is completed.

The Manhattan city council has voted to place an electric light one block east of the main entrance to the College campus.

Prof. W. A. McKeever visited the Girls' Industrial School and attended the teachers' association at Beloit during the Thanksgiving vacation.

Judge W. Brown, of the juvenile court of Salt Lake City, lectured last night (Friday) in the Auditorium. His subject was "The American Boy," and he handled it well.

The third annual meeting and corn show of the Kansas Corn Breeders' Association will be held at the Kansas State Agricultural College, December 31, '07, and January 1, '08.

Mr. Scheffer, assistant zoölogist of the Experiment Station, spent a part of the Thanksgiving vacation in demonstrating methods of destroying gophers in alfalfa fields along the Arkansas, near Sterling.

The financial troubles of the East have had no influence on the trade and building operations of Manhattan so far. Mechanics are about as scarce as ever, and new buildings are being started all over town.

The State Farmers' Institute will be in session at this College December 26 to January 4. Work in stock and corn judging will be given eight hours daily, December 26, 27, 28, 30; for remaining days, two hours to each subject each morning.

Miss Antonetta Becker, of the Department of Domestic Art, and Miss Ella Weeks, of the Department of Architecture and Drawing, are arranging to have another annual exhibition of student work of their classes at the close of the fall term. The exhibition will be held on the second floor of Kedzie Hall.

Asst. B. R. Rogers, of the Department of Veterinary Science, lectured before the Manhattan Domestic Science Club on "A Field for Women in the Study, Prevention and Eradication of Tuberculosis," last Thursday afternoon in the City Library.

The Department of Agronomy has just finished taking notes on winter grain. The wheat is found to be in excellent condition, having made a fair growth. It now nearly covers the ground. There is little evidence of the work of the Hessian fly except in the very early sowings. The indications that wheat will pass the winter in good condition are favorable.

The new Y. M. C. A. Hall is nearing completion, though it may take a month or two to put on all the finishing touches and remove the debris. The heating plant is installed, the basement is cemented, the grounds are leveled, the plumbing pipes and connections are laid—in short, the building is well along in every way. The plasterers and painters are at work all over it, and if the fine weather continues there will be but little left to do by January 15.

The following prominent men are expected to speak at some of the various conventions to be held at the College December 30 to January 4: Col. W. A. Harris, Chicago; Dr. F. L. DeWolf, Topeka; Col. W. E. Skinner, Denver; Mr. Alfred Montgomery, farm-painter, of Chicago; Prof. F. H. Rankin, of the University of Illinois; Mr. Wesley Merritt, Industrial Commissioner of the Santa Fé railroad; Mr. S. C. Lancaster, consulting engineer Department of Agriculture, and others.

The best football game ever played in Salina was played Thanksgiving afternoon between the second team of the State Agricultural College, at Manhattan, and Wesleyan, the score resulting 11 to 5 in favor of the visitors. It was an old-fashioned game and was won by heavy line bucking. Manhattan's first touch-down was made in three minutes after the opening of the second half. The first touch-down for Wesleyan was made by Bingleman, on a 25-yard run.—*Salina Paper*.

Our teams, who took part in the International stock- and corn-judging contests held annually in Chicago during the first week in December, did not have good luck this year. The stock-judging team, consisting of students, J. A. Milham, W. T. McCall, C. F. Blake, B. C. Copeland, and H. L. Popenoe, accompanied by Professor Kinzer, got fifth place. There were eight contesting colleges, and the trophy went to the Agricultural College of Ontario. The highest score of our boys was made by McCall, who stood eleventh in the list of forty students. The corn-judging team consisted of students W. L. Shelley, F. C. Miller, A. B. Cron, C. Doryland and J. E. Brock, and was under the direction of Asst. E. G. Shafer. We got second place, the first going to Iowa Agricultural College, which will get the \$1500 trophy. Shelley's work stood best in our team, and the boys ranked in the above order. Our team was greatly handicapped by the fact that all the corn judged were Iowa and Illinois varieties.

Professor TenEyck has received many compliments on bulletin No. 147. Prof. W. M. Hays, assistant secretary of the United States Department of Agriculture, writes: "You certainly have made a good start both in methods and results in your corn-breeding work." Prof. M. F. Miller, of the University of Missouri, also writes: "Your bulletin is certainly very much to the point, and means that you people are in the front rank in getting results."

The Department of Agronomy is busy preparing for the Kansas State Corn Breeders' Association meeting, which will be held at this College December 26 to January 4; also for the boys' corn contest, which will be held here during the same period. Professor TenEyck expects a large corn exhibit. There will probably be 500 samples of 10 ears each. The exhibition will be held in the Girls' Gymnasium. The department is also preparing to make a large exhibit of its own seed-corn and seed grain. It is planned to duplicate in part the exhibit made by this department at the National Corn Exhibition held at Chicago last October.

The Department of Agronomy has several hundred bushels of the following varieties of seed-corn for sale: Kansas Sunflower, Reed Yellow Dent, Hildreth, Legal Tender, Hogue Yellow Dent, Boone County White, McAuley, and Roseland White. The department also has on hand a considerable quantity of pure-bred red and white Kafir-corn, Dwarf milo maize, Kansas orange, Black Dwarf and White sorghum, early Yellow soy-beans and New Era cow-peas. The department has published circular No. 12, giving information about seed-corn and seed grain which is offered for sale. This circular will be sent to parties interested. Address Agronomy Department, Kansas State Agricultural College.

The egg-laying contest, conducted by the Department of Dairy-ing, in which twenty-four breeds of chickens, with six hens in each pen, were entered, closed November 30. It lasted one year and gave the following results. The White Leghorns owned by A. F. Snodgrass, of Purcell, Okla., produced 834 eggs, with a net profit of \$4.53. The Buff Leghorns owned by W. B. Wilson, of Ottawa, Kan., produced 660 eggs, with a net profit of \$2.82. The third winner was that of the Black Minorcas owned by H. Amos, of Manhattan, Kan., which produced 651 eggs, with a net profit of \$2.02. The greatest loss made by any one pen was that of the Rose-Combed Rock Island Reds owned by the Kansas State Agricultural College, which showed a loss of \$2.01. A press bulletin giving brief results will be prepared by the department in a few days.

A special to the *Topeka Capital* from Emporia has the following to say in part regarding the paper by Assistant Burton R. Rogers, of the Veterinary Science Department of this College, read before the Kansas Academy of Science: "A sensation was created this forenoon at the annual session of the Kansas Academy of Science, now being held in Norton Science Hall at the State Normal, by a paper on tuberculosis, read by Professor Rogers, of the Agricultural College. He takes the ground that tuberculosis can only be caused by the tuberculosis germ enter-

ing a living body, and claims that the terrible scourge can be eliminated from the country. There are but two ways for contamination, he claims—by inhaling germs contained in the dry expectorations of contaminated persons, and by eating diseased meat. The former, he claims, is comparatively insignificant as compared with the latter, and he therefore claims that if all diseased animals are extirpated it will be but a short time ere, with care, the dread disease may be eliminated also from the human family. A few years ago he was a federal meat inspector in Iowa, and he estimates that six per cent of the hogs and cattle of the country have tuberculosis, more or less. He says the packers now, each year, are purchasing these diseased animals, and are having them condemned on their hands; that they will continue to purchase them and they increase each coming year, and that it would be to the interest, financially and otherwise, to at once purchase all the tubercular animals in the country, if they knew just where they could be located. His plan is to locate every place where a tubercular animal comes from, by means of tags to be attached to the ear of every animal brought to market, so that, after it is slaughtered, it can be identified, as well as the place whence it come and from whom it had been purchased. In this manner, he claims, every infected animal in the country may be located.”

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### ***Alumni and Former Students.***

J. L. Stanley, student in 1903-'04, is publisher of the *Coldwater Talisman*, Coldwater, Kan.

Mamie (Alexander) Boyd, '02, with her baby boy visited College last Tuesday morning. With Mr. Boyd they spent Thanksgiving at the Alexander home.

Richard Mason Bourne was born November 18, 1907, to Dr. and Mrs. R. F. Bourne, 1526 Harrison street, Kansas City, Mo. The doctor is a well-known member of the class of 1903.

H. B. Holroyd, '03, has been spending his vacation at home and has gone on to Washington to resume office work there. He is in the Forest Service and has spent the season in California, Oregon and Washington studying questions on the economic utilization of national forest woods.

F. A. Dawley, '95, is extensively advertising his great sale of Poland-China swine that will be held in the judging pavilion of the College, December 16. He invites all breeders to be present, whether they want to buy or not, and announces a special train from Kansas City on the morning of the sale.

Gertrude Lill, '07, who has been attending the State Normal School, Emporia, spent the Thanksgiving holidays in Manhattan and has now entered upon her duties as assistant principal of the schools of Council Grove. She is teaching history and English at present, but expects to take up sciences and mathematics after the first of the year.

W. L. Hall, '98, is the author of Circular 116 of the Forest Service. This is largely a statistical publication, though not to any great extent in the form of figures. It shows strongly the imminent great scarcity of hardwood for building railroad ties, furniture, vehicles, etc.

Dr. Schuyler Nichols, '98, was married Thursday evening, November 28, in Wichita, to Miss Capitola Collier. Miss Collier was formerly a resident of Liberal, Kan., and is a graduate of the University of Kansas. The young couple will have sincere and hearty congratulations and best wishes from the many friends of each. Doctor and Mrs. Nichols will be at home after January 1, at 109 South Broadway, Herington, Kan. They made a short visit in Denver soon after the wedding, where Doctor Nichols attended a meeting of the surgeons of the Rock Island system.

Changes of address: L. A. Fitz, '02, 14 Chamber of Commerce, Minneapolis, Minn.; John L. Wise, '86, Greenville, Ill.; V. L. Cory, '04, Bureau of Plant Industry, Washington, D. C.; S. J. Adams and J. W. Adams, '98, R. F. D., Arapahoe, Colo.; Henrietta Hofer, '02, Brielle, N. J.; W. B. Gernert, '07, 905 West Nevada street, Urbana, Ill.; A. H. Leidigh, '02, 735 13th street, N. W., Washington, D. C.; H. T. Nielsen, '03, 4520 9th street, N. W., Washington, D. C.; Ella (Child) Carroll, '77, Manhattan, Kan.; H. G. Maxwell, '06, 140 N. Garfield Avenue, Columbus, O.; Katharena (Winter) Hawkes, '01, Chanute, Kan.

One of the prettiest home weddings solemnized in our city this season was that of Miss Josephine Walter and Mr. Perle H. Skinner, '07 class, which occurred last evening [November 27] at 6:30 o'clock at the home of the bride's parents, Mr. and Mrs. J. B. Walter, 1010 Humboldt street. The ceremony was performed by Rev. S. A. Bright, of the Methodist church. The bride was attended by Miss Kate Hutchinson ['07], of Smith county, and the groom's best man was Mr. Streeter ['07], of Keats. A two-course luncheon followed the ceremony. Fifty invitations had been sent out. Mr. and Mrs. Skinner leave Thursday afternoon for a few days' visit at Mankato with relatives, and will return here to reside. Their many friends extend congratulations.—*Nationalist*.

A quiet wedding took place at the Episcopal church Wednesday morning at 10:30 o'clock when Wm. D. Davis ['04] and Miss Agnes Hopper were united by the Rev. E. R. Allman. Mrs. George Hopper, the bride's mother, and G. W. Skow, of Topeka, a particular friend of the groom's, were the only witnesses. Mr. and Mrs. Davis left on the noon train for Topeka, where they will make their home, Mr. Davis being employed as an electrician in the Santa Fé shops. He was very popular among his fellow students, to whom he is familiarly known as "Skelly." The bride is a former student of the College and has recently been making her home in Manhattan. She is an estimable young lady, who is admired by all who know her for her many womanly qualities. The best wishes of many friends follow Mr. and Mrs. Davis to their new home.—*Republic*.

*Board of Instruction (concluded).*

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# The Industrialist.

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## TERMS AND VACATIONS.

### FALL TERM, 1907, THIRTEEN WEEKS.

Thursday and Friday, December 19, 20.....Examination at close of term

### WINTER TERM, 1908, TWELVE WEEKS.

Monday, January 6.....Examination for admission, at nine A. M.  
Tuesday, January 7.....Winter term begins  
Tuesday, January 7.....Short courses in agriculture and dairying begin  
Saturday, January 25.....Annual intersociety oratorical contest  
Saturday, February 15.....Mid-term examination  
Thursday, March 19.....Annual concert  
Thursday and Friday, March 26, 27.....Examination at close of term

### SPRING TERM, 1908, ELEVEN WEEKS.

Monday, March 30.....Examination for admission, at nine A. M.  
Tuesday, March 31.....Spring term begins  
Saturday, May 9.....Mid-term examination  
Tuesday, May 19.....Beginning of summer course in domestic science  
Tuesday and Wednesday, June 16, 17.....Examination at close of year  
June 14 to 18.....Exercises of Commencement week  
Thursday, June 18, at ten A. M. ....Commencement  
June 19 to September 16.....Summer vacation

### FALL TERM, 1908,

Wednesday, September 16.....Examination for admission, at nine A. M.  
Thursday, September 17.....College year begins

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(Board of Instruction concluded on last page.)

# THE INDUSTRIALIST.

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## *Agricultural and Mechanical Colleges.*

Volume I of the annual report of the United States Commissioner of Education for the year 1906 was received last week. It is an interesting document, full of valuable statistics. Most of the figures in its tables are from one to two years old and a revision to date would make them more valuable, yet they testify to a most remarkable growth of the American school system and the higher institutions of learning. The so-called land-grant institutions occupy a prominent position, and as the volume is not accessible to many the INDUSTRIALIST has found time to excerpt and condense the following paragraphs:

"The reports of the presidents of these 66 institutions show an enrolment in all departments of 59,093 students, an increase of more than 100 per cent in ten years. During that time the students in agriculture increased from 2,881 to 8,121, including students in short courses; students in engineering courses increased from 6,630 to 13,937. Of the 8,121 students in agriculture in 1906, 5,158 were in short and special courses, and 2,963 in regular four-year college courses.

"The value of the property of these institutions amounts to \$85,366,897. Of this sum \$12,492,560 represents the funds derived from the sale of the land grant of 1862, which is an increase of about \$450,000 over the amount reported for the preceding year. The value of the material equipment of these institutions amounts to \$50,602,209.

"Their income for the year amounted to \$13,605,158. Of this sum the States furnished over 55 per cent and the General Government a little more than 15 per cent, while less than 30 per cent was derived from other endowment funds, fees, and miscellaneous sources. The proportion of the expense of maintaining the institutions that is furnished by the States is increasing very rapidly, while the proportion furnished by the General Government is correspondingly decreasing. Of the amount received from the States during the year, namely, \$7,531,502, the sum of \$3,133,831 was for buildings and other

special purposes. The States have increased their appropriations and other provision for these institutions by about 240 per cent in the past ten years.

"With respect to the funds appropriated by an act of Congress approved August 30, 1890, the reports of the treasurers show that increasing proportions of such funds are applied to instruction in agriculture and the mechanic arts, the proportion expended for instruction in agriculture having risen from 16.1 per cent in 1903 to 17.6 per cent in 1906, and that in mechanic arts from 27.9 per cent to 30.5 per cent. A comparatively small proportion, 5.9 per cent, was expended for instruction in economic science.

"Among the especially noteworthy legislative enactments within the year 1906 affecting these institutions may be mentioned the provision by Massachusetts for the establishment of a normal department at the Massachusetts Agricultural College for the purpose of giving instruction in the elements of agriculture to persons desiring to teach that subject in the public schools; the appropriation by Georgia of \$100,000 for buildings and furnishings for the agricultural college, and provision for the appointment of a board of trustees for the management and control of the department of agriculture and farm technology of the Georgia State College at Athens; provision by Iowa for a special tax levy of one-fifth of 1 mill on the dollar for necessary buildings, and an appropriation of \$15,000 for agricultural extension work throughout the State. New York passed a law defining the object of the State college of agriculture at Cornell University.

"The provision by Massachusetts for the establishment of a normal department at the Massachusetts Agricultural College may mark the beginning of a very important movement. It is by such means that provision may be made for a supply of teachers for the secondary schools of agriculture which are coming into being in many of the States, and for the elementary schools in States where elementary agriculture is a required or authorized subject of instruction.

"We are on a rapidly rising wave of agricultural and industrial education. Fifteen years ago there was not a single public school of agriculture in this country other than the colleges endowed under the Morrill acts of 1862 and 1890. Since that time schools of agriculture and domestic arts, generally of high school grade, have been established by the States of Alabama, California, Georgia, Minnesota, and Wisconsin. And in the legislatures now

in session in the States of Arkansas, Iowa, Michigan, Minnesota, and Wisconsin bills have been introduced providing for the establishment or the extension of such schools. Statutory provision has also been made in the same period for the teaching of agriculture in the elementary schools of Alabama, Georgia, Illinois, Michigan, Missouri, Wisconsin, and several other States. Ten years ago there were no public trade schools other than agricultural and commercial schools in the United States, excepting those found in institutions for the defective and criminal classes. What is ordinarily known as a trade school, such as the Auchmuty schools in New York and the Lick and Wilmerding schools in San Francisco, existed only on private foundations. Now there are trade schools carried on as part of the public school system in Springfield, Mass., in Columbus, Ga., in New York and Philadelphia; and bills have been proposed in the legislatures of Colorado, Connecticut, Massachusetts, Pennsylvania, and Wisconsin permitting or requiring public school authorities to establish such schools.

"Such widespread movements as these are significant facts in our educational situation. But the danger should not be concealed that these movements may prove disappointing for lack of specially qualified teachers. A new subject can not be put into our education by merely putting it into the school curriculum. It takes a qualified teacher to make of the curriculum subject an education subject. The fact is widely recognized that schools of these newer types will require considerable expenditures for apparatus and other equipments, and such expenditures, it may be expected, will be made ungrudgingly. But the further fact should be clearly set forth that these schools, to serve their purpose, must be manned by highly trained teachers; that poorly prepared teachers can not make such schools, and that liberal salaries must be offered in order to induce a sufficient number of men and women of good ability and adequate preparation to enter this new educational service. Even the offer of adequate salaries will not call a sufficient number of well-trained teachers into the service unless opportunities of securing the requisite preparation are made accessible. It is this need of provision for the special preparation of such teachers that I wish to emphasize.

"The greater number of teachers in secondary schools of an industrial character, as in any other secondary school, should have had scholastic training of at least the collegiate grade. They should have done advanced work in the special subjects they are to teach. It is not enough that a teacher of agriculture in a high school should be a farmer's boy who has gone to college. He

must have some first-hand knowledge of modern, scientific agriculture. It will not be his business simply to teach boys by rote and routine how to be good farmers. He is to help them directly to be good farmers, but he is to help them especially to be good, progressive farmers. That is, he is to teach them to observe accurately and pass intelligent judgments upon the ordinary affairs of the farm; to read with understanding the bulletins and journals which give information concerning the latest agricultural improvements; to coöperate with those who in these days are leading our agricultural industries into better and more profitable ways, through a utilization of scientific knowledge. Moreover, if he is to train boys to be skillful as farmers, he should himself be skillful as a teacher. He should have some regular training in the theory and practice of teaching, in order that he may do his own work well and adjust it organically to the general make-up of the school and to the general purpose of education.

"To those who are concerned with the professional training of teachers this problem of preparing for the business of teaching in agricultural and industrial schools is one of the most urgent that can now be presented. The subject is commended to the serious consideration of the managers of State normal schools, who have to do especially with the education of teachers for the elementary grades. Many of their graduates will be called upon to teach the elements of agriculture, domestic economy, and other industries. It is commended to the serious consideration of the managers of teachers' colleges, normal colleges, and other institutions dealing with higher grades of teacher training. It is a subject which calls especially for consideration by the authorities of the agricultural and mechanical colleges endowed under the provisions of the Morrill acts of 1862 and 1890. In no one way can these colleges do more to spread abroad the knowledge and skill in agriculture, domestic economy, and manual arts, which they are fostering and promoting, than by sending teachers of these subjects into the high schools in which such subjects are to be taught.

"It does not follow that departments for the training of special teachers should be organized in all of the sixty-six "land-grant" colleges. It seems to me especially desirable that such departments should be organized and equipped where these colleges are component parts of large universities and in States where provision is making for a regular system of agricultural high schools. In many of the States, too, teachers with such training as is here proposed will be in demand not only in high schools but as special instructors in State normal schools. In no case is it

desirable that the training of teachers be undertaken by an agricultural college as a merely incidental matter. The coöperation of all of the leading departments of the college will be needed; a school of practice and observation, with its special work-shops, laboratories, and gardens, is well-nigh indispensable; and a force of competent instructors should give their chief attention to this particular service. It should be frankly stated that such an undertaking as this will involve considerable expense, and the work should not be attempted on a cheap and narrow basis."

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### ***Market Milk Standards.***

For many years cities and states have been framing and putting into effect certain laws governing the sale of milk. Milk is extremely variable in quality, or rather in percentage of fat, and is easily adulterated. For a good, unadulterated product, the consumer must rely very largely upon the honesty of the one who sells it. Our cities especially have realized this, and to prevent discriminations by unscrupulous persons have in various ways sought to regulate the sale of milk. The chief method used is that of setting arbitrary standards regulating the minimum per cent of fat and solids not fat the milk should contain. The fat is the most variable and valuable of the constituents of milk, so milk is ordinarily conceded to be valuable for human food in proportion to the amount of fat it contains. Where milk is used in large quantities as food it may contain too much fat, or it may be too low in fat to be easily assimilated. Milk, to be an ideal food for the great mass of people, should contain about four per cent of fat. If consumed in large quantities, and the fat very much exceeds this per cent, milk does not digest readily. On the other hand, if the fat is three per cent or under, the casein and other solids are in excess of the fat, and the milk is rendered less digestible. The removal of fat does not affect the other solids more than to increase their percentage. Such milk is just as valuable as a food, except that the shortage of fat must be supplied in some other form of food.

The object of the writer is to outline clearly the weakness of the standards now in force, such as are established by many cities, and to show how best the milk supply may be controlled with equal justice to all. The standard of milk is placed upon the fat, which is a very changeable constituent, in fact the most changeable constituent of milk. It varies not only in different breeds of animals, but in individual animals. It also varies according to the

period of lactation and the amount of milk given. It is influenced by the nervous conditions of the cow caused by fright or sexual excitement. If the fat is so changeable and varied in not only different breeds, but in individual animals, how then can we use it as a standard?

Some cities have set the standard as low as 2.5 per cent fat, with a total per cent of solids 12, while the average standards require 3 per cent of fat and 12 per cent total solids. The total solids is found by first testing the milk for fat and then adding the fat to the amount of solids not fat, which is found by the specific gravity, or the lactometer test. The solids not fat in pure milk seldom, if ever, are less than 8.25 per cent or more than 9.25 per cent. It is generally taken from the average of all tests which have been conducted by the various experts and experiment stations. Pure milk contains 87.5 per cent of water and 12.5 per cent total solids; or, in other words, an average of 3 to 4 per cent of fat and 8.25 to 9.25 per cent of solids not fat. Therefore, less than 8.25 per cent of solids not fat shows evidence of adulteration by water, or milk showing more than 9.25 per cent of solids not fat justifies suspicion of being adulterated by the removal of fat.

I wish at this point to make clear that it is upon the constituents of milk known as the solids not fat that we base our test as to purity, as these solids are the least changeable. Let us compare some of the standards. For instance, take the standard of 2.5 per cent of fat and 12 per cent of solids not fat. If we subtract the fat from the total solids we will have 9.5 per cent of solids not fat, or a lactometer reading of 34.60, with 2.5 per cent of fat. Such milk tested by an expert would be considered as skimmed. Yet the law justifies the sale of same. Then take the average standard, which is 3 per cent fat and 9 per cent of solids not fat. Supposing a dairyman is delivering milk from a herd that is producing milk with a lactometer reading of 32.5 and a fat test of 4 per cent, the milk has 12.92 per cent of total solids and a fat content over the standard of 25 per cent. He may remove, then, 25 per cent and still have the milk contain 3 per cent of fat, and by removing the fat he increases the lactometer reading .8 per cent, which gives him 9.12 per cent of solids not fat, or 12.12 per cent of total solids. I leave it to all fair-minded persons to consider whether the standard is just to all.

The yearly average of fat produced by the cows of the United States is taken as 3.5 per cent, yet our cities declare three per cent as the standard. I trust I have shown clearly the weakness

of the standard laws as we now have them. I am in favor with the practice of furnishing the consumer with a perfectly pure article of food placed upon the market and sold according to its quality. This will permit and encourage the breeding of cows that will produce a high class of milk at an increased price. It will also permit of breeding and developing cows that will produce a large quantity of milk of a lower per cent of fat, which can be furnished to the poor of our cities at a lower price. To overcome any danger of fraud the herds should be the standard. If any producer be found delivering milk containing less fat or total solids than is given by the herd he should be considered as a criminal and prosecuted as such. Thus it is true that this would necessitate the employment of some competent person to test the milk that is delivered by the producer or the dealer, and where the product is of questionable purity the herd should be milked and the milk tested for fat.

The bulk of the milk purchased for domestic use is consumed by the children, and it forms the greater part of their sustenance. Hence the health of our future generation will depend largely upon the sanitary conditions of the milk supply. The reports and tests made by the United States Experiment Station have proved that tuberculosis is most prevalent among cattle. Hence, in the interest of the state cattle and hog industry they authorize that the skim-milk of the creameries be pasteurized before feeding. Doctor Rogers, of the Kansas State Agricultural College, has made this very clear in a paper read at Manhattan recently, in which he points out the danger of tuberculosis from the milk supply. Why, then, should not the herds supplying milk, especially for town and city trade, be tested for tuberculosis, and producers prohibited from supplying milk unless their herds have been tested and found healthy?

Again, other diseases have been traced to the milk supply. The writer has in mind two instances where typhoid epidemic was traced to the milk supply by an individual producer having washed his milk utensils with water which was badly infected with the typhoid bacillus. Doctor Santee, of Washington, fully realized this when he devoted his time so energetically to the dairy herd scoring project, which has had much to do with the betterment of the milk supply for cities. I trust this good work may continue until the sanitary conditions of our milk supply will be unquestionable.

D. M. WILSON.

***State Corn-Growing Contest.***

Professor Ten Eyck, of the Department of Agronomy, is sending out the completed premium list of the Kansas State Corn Show, which will be held at this College on December 31, '07, and January 1, '08. From present indications this will be the largest and most successful meeting and exhibition in the history of the association. Premiums amounting to a total value of over six hundred dollars will be awarded in the following classes:

Class A.—Largest yield of corn per acre, three prizes.

Class B.—Best ten ears of yellow corn, five prizes.

Class C.—Best ten ears of white corn, five prizes.

Class D.—Corn not included in the above, five prizes.

Sweepstakes.—Best ten ears of corn in the show, five prizes.

Boy's Contest.—Best ten ears of corn, twenty-five prizes.

The boys' corn contest of 1906 had an enrolment of about 5000 boys between the ages of ten and eighteen. In the spring of 1906 the county institute committees furnished the seed-corn, in most cases of some pure-bred variety. The announcement from the State Institute Department in 1907 suggested that boys in the 1906 contest be permitted to plant corn of their own raising, especially recommending that these boys plant ten ears.

Last year the local committees gave cash prizes, but this year practically all committees gave as prizes trips to the State Institute, paying railroad fare both ways and board during the nine days of the State Institute. Consequently almost four hundred boys won this valuable prize—a trip to the Kansas State Agricultural College with all expenses paid. These boys are sent by farmers' institute committees, commercial clubs, and by public-spirited business men. Each local winner has the privilege of selecting other ears of corn than those entered in the county contest, providing he enters no ears but those grown in his own contest plot.

The following are the brief rules concerning the boys' contest: (1) Exhibitors for the State contest must have been winners in some local contest and certified to by the officers in charge of the local contest. (2) Corn exhibited in the State contest must have been grown from the seed furnished by the local committee in the spring of 1907, or from corn grown by the contestant in the contest of 1906. (3) No corn will be entered in the State contest unless brought to the contest by the exhibitor in person not later than 3:00 P. M., Monday, December 30, '07. (4) All corn is to remain the property of the exhibitor.

The great annual sale of prize corn and other desirable samples

exhibited for prizes will begin promptly at 11:15 A. M., Wednesday, January 1. The proceeds of this sale will be used, in part, to defray the expenses of publishing the annual report of the Corn Breeders' Association, copies of which will be mailed to any address on receipt of 25 cents. There are still on hand a number of copies of the first and second annual reports at 15 cents each. To members, these reports are free. Purchasers of prize corn will be required to leave this corn on exhibition until 5:00 P. M., January 1, 1908.

For printed copies of the rules governing these contests, or for prize lists and programs, address the acting secretary, Prof. A. M. Ten Eyck, Manhattan, Kan. The program of the State Farmers' Institute held at this College from December 26, '07, to January 4, '08, will be found on another page of the INDUSTRIALIST.

If you want to grow more corn and better corn; if you believe in crop improvement by seed breeding and soil culture; if you believe in modern, progressive agriculture; if you want to move forward in the ranks of the most enthusiastic farmers' organization in the State; if you want to become acquainted with the best farmers in Kansas; if you want to come in touch with the best that is known and said and written about corn breeding and crop improvement; if you want to make more money on the farm, improve your home, increase the value of your land and make your life more successful and happy, join the association which stands for all these things and a great deal more. Hand your name and a dollar to the secretary, and become a member of the association.

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The Department of Dairying of this College made a graphical exhibit at the Chicago National Dairy Show, November 9 to 14, explaining how continuous cropping removes soil fertility and how this may be restored by dairying. The exhibit drew many favorable comments and the department is receiving letters from many dairy publications and creamery men asking for facts connected with the exhibited matter. One party writes, "I have seldom seen anything that brought to the eye the exact relation of dairy products to the soil as well as this pictorial illustration that I saw in your exhibit at Chicago, and I believe that it would be of great value if this matter could be published and distributed."

### **Local Notes.**

Winter term begins Tuesday, January 7.

The Board of Regents will meet December 31.

The workshop enjoys the installation of a new power grindstone.

The College Aberdeen-Angus herd won \$350 in prizes at the Chicago International Live Stock Show.

State Architect Stanton was here last Monday to make the monthly estimates for the contractors of the new Domestic Science and Art Hall and the new Veterinary Hall.

The Veterinary Department has built an addition to its horse hospital. It joins the present temporary building on the west side, and contains a number of single stalls and a box-stall.

Prof. W. E. King, of the Department of Bacteriology, has lately analyzed a number of samples of milk, drinking water, and tissues for parties in different parts of the State. So far the Department has made no charges for such work.

Ex-regent and Mrs. John E. Hessin and their two daughters left Tuesday for Havana, Cuba. On their way they will stop at St. Louis, Atlanta, Ga., Charlestown, S. C., and Jacksonville, Fla. The women will spend the winter in Cuba, but Mr. Hessin will return to Manhattan in February.

Prof. V. M. Shoesmith, of the Agronomy Department of Maryland Agricultural College, formerly assistant in the Agronomy Department of this College, has accepted a call to the chair of Agronomy of the Ohio State University and Agricultural College, Columbus, O. His new work will begin January 1.

Superintendent Lund has finally completed the work on the new pump pit and has repaired the cave-in of the east wall of the power-house. To dig and wall up this pit was a difficult piece of work—one of those thankless jobs that are never seen after they are done, because they go underground.

The Y. W. C. A. art calendar for '08 is now on the market. It is a handsome and interesting piece of art work consisting of twelve sheets, each containing the days of one month. The pages are ornamented with cuts of the College buildings and with original pen drawings made by students of the classes in drawing under the direction of Miss Ella Weeks. The price is only 35 cents.

The farmers' institute at Leoti was a great success, with over three hundred farmers and their families present. Organization was made with S. E. Lee for president and C. K. Gerard for secretary. Discussions were on wheat and live stock. Messrs. Miller and Kinzer, from the State Agricultural College, were here, assisted by local speakers. An alfalfa meeting will be held on Saturday.—*Press Item.*

The assignment committee is busy making the assignments for the winter term. It is intended to assign every student before the close of the fall term, so that no time need be lost with organizing classes in January, when the winter term opens.

Prof. David E. Lantz, formerly of this College and at present assistant in the Bureau of Biological Survey, Washington, D. C., has lately issued a bulletin (Farmers' bulletin 297 U. S. Department of Agriculture) on "Methods of Destroying Rats." The pamphlet is a highly interesting and practical document of eight pages treating the life history of the rat, and the methods of poisoning, trapping, ferreting and fumigating the pest. The booklet has also a chapter on rat-proof construction of buildings and a paragraph on natural enemies of the *Mus Norvegicus*.

The Domestic Art Department, under the direction of Supt. Antonetta Becker, and the classes in color and design, under Instructor Ella Weeks, will give an exhibition of their fall-term work, in Kedzie Hall, on Tuesday, December 17. The exhibits will be on the second floor of the building and will be open from 10 A. M. to 5 P. M. Everybody interested is invited to visit the exhibition rooms and see what the students of the domestic science course are doing. Remembering the beautiful work exhibited last year, we know that we can promise a rare treat.

Reports made at the meeting of the State Grange at Lawrence show that the Grange in Kansas is growing steadily. The order has gained eight hundred members and eight subordinate granges within the past twelve months, besides accumulating a net sum of \$1500 in receipts above all expenditures. There are now eighty-eight subordinate granges in Kansas in good working condition. The number of delegates indicates a State membership of 20,000. A tribute to the Kansas State Agricultural College and its work for the agricultural interests of the State was one of the features of the meetings.

Regent A. M. Story returned last Saturday from Chicago, where he visited the International Live Stock Show. While there he helped Professor Kinzer buy five imported Hampshire ewes for the herd at the College. The five ewes were chosen from a flock of one hundred. Later the remaining ninety-five were put in the sale ring, and eighty of them sold for \$30 each. Judge Story has recently become impressed with the value of a few sheep to the average farmer, not because wool and mutton happen to be high just at present, but because he believes there is always a profit in keeping a few. They are the best farm scavengers known; they keep the weeds out of the pastures, and in the fall, when the corn is nearly matured, they can be turned into the corn fields where they will clean out the weeds and crabgrass without damaging the corn. Besides doing this service, for which they earn their board and keep, they produce three crops a year—in the spring they produce a fleece, later there is a crop of lambs, and in the fall the old sheep can be marketed at a profit.—*Mercury*.

Lieut. Chas. H. Boice, of the Military Science Department, has made the following promotions in the College battalion: To be sergeant Co. "C"—John T. Wilson. To be corporals Co. "A"—Verne A. McCall, Wm. B. Wood. To be corporals Co. "B"—Fritz F. Harri, Arthur L. Kahl. To be corporals Co. "C"—Appleton Hazzard, Percy P. Potter. To be corporals Co. "D"—Leo E. Duehn, Reynold C. Shuyler, Ernest Sechrist, Frederick Williams, Burgess W. Roberts.

Several members of the Faculty will take active part in the program of the State Teachers' Association, which will meet at Topeka, December 25 to 27. President Nichols will speak on "The Function in Kansas Education of the Agricultural College," Assistant Scheffer will speak on "Biology Illustrated," also on "Courses of Study and Text-Books," Professor McKeever will present "The Making of the Home a Social Art," and Instructor Ula Dow will demonstrate and lecture on "Cookery of Eggs."

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### ***Alumni and Former Students.***

W. P. Schroeder, '06, asks that his INDUSTRIALIST be sent to him at Woodward, Okla., where he is manager for the Woodward Creamery Company.

Dr. Raymond H. Pond, '98, who has been studying at the New York Botanical Garden during the past year, sailed for Europe on November 7 to spend several months in visiting German botanical laboratories.

On Sunday, December 1, a son was born to Mr. and Mrs. Byron Broom, of E. 356 Carlton Court, Spokane, Wash. Mr. Broom is a member of the class of 1906, and Mrs. Broom will be remembered as Daisy Strite, a sophomore student in 1902-'03.

Changes of address: A. E. Oman, '00, Forest Service, Washington, D. C.; W. S. Sargent, '01, Manhattan, Kan.; Stella Finlayson, '07, Cheyenne Wells, Colo.; B. F. S. Royer, '95, 700 North Hull street, Los Angeles, Cal.; F. R. Jolly, '95, 317 Clay street, Topeka, Kan.

P. H. Jorgensen, dairy student 1905 and 1906, is now in business in Colby. He conducts a cream-receiving station for the Continental Creamery Company and handles poultry, butter, and eggs. He is building up a good business. He was also of material assistance in the farmers' institute held there this week.

Lieut. O. G. Palmer, '87, renewed acquaintance with his College mates, Henrietta (Willard) Calvin, '86, and J. T. Willard, '83, whom he met as they were going out on an institute trip. It will interest his old friends to know that he is in the army because of inability to resist his martial instincts, and that with nearly white hair and a full gray beard he will puzzle any of them to recognize him. He is "every inch a soldier," and is hoping for promotion to a captaincy in the not distant future.

## FARMERS' WEEK

### Kansas State Agricultural College,

**Manhattan, Kan., December 30 to January 4.**

(State Farmers' Institute, December 26 to January 4.)

### Convention Calendar.

#### Monday, December 30.

- 2:00 P. M. Boys' Corn Contest Association.  
Kansas Butter Makers' Conference.
- 8:00 P. M. Boys' Corn Contest Association.  
Butter Makers' Convention.

#### Tuesday, December 31.

- 8:00 A. M. Butter Scoring Contest.  
Boys' Contest Association.
- 2:00 P. M. State Corn Breeders' Association.  
State Dairy Association.
- 8:00 P. M. State Corn Breeders' Association.  
State Dairy Association.

#### Wednesday, January 1.

- 8:00 A. M. State Corn Breeders' Association.  
Inspecting Creamery and Creamery Supplies.
- 10:00 A. M. State Dairy Association Meeting.
- 2:00 P. M. State Good Roads Association.  
Draft Horse Breeders' Association.  
State Dairy Association.
- 8:00 P. M. Good Roads Association.  
Draft Horse Breeders' Association.

#### Thursday, January 2.

- 8:00 A. M. Inspection of Road Making Machinery.  
Special Judging of Stallions and Mares.
- 10:00 A. M. Good Roads Association.  
Draft Horse Association.
- 2:00 P. M. State Veterinary Medical Association.  
Aberdeen-Angus Association.  
Shorthorn Association.  
Hereford Association.
- 8:00 P. M. Cattle Breeders' Meeting.  
State Veterinary Medical Association.

#### Friday, January 3.

- 8:00 A. M. Judging Three Breeds of Cattle.  
Kansas State Veterinary Association (clinic).
- 2:00 P. M. Poland-China Association.  
Duroc-Jersey Association.  
Berkshire Association.
- 3:00 P. M. Swine Breeders' Conference.
- 8:00 P. M. Swine Breeders' Conference.

#### Saturday, January 4.

- 8:00 A. M. Judging Hogs.
- 10:00 A. M. Swine Breeders' Conference.

*Board of Instruction (concluded).*

|                                                                  |                                           |
|------------------------------------------------------------------|-------------------------------------------|
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FARMERS' WEEK NUMBER.

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No. 13

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*Manhattan, Kansas*



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The Industrialist.

PRES. E. R. NICHOLS.....	Editor-in-Chief
PROF. J. D. WALTERS.....	Local Editor
PROF. J. T. WILLARD.....	Alumni Editor

TERMS AND VACATIONS.

FALL TERM, 1907, THIRTEEN WEEKS.

Thursday and Friday, December 19, 20.....	Examination at close of term
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WINTER TERM, 1908, TWELVE WEEKS.

Monday, January 6.....	Examination for admission, at nine A. M.
Tuesday, January 7.....	Winter term begins
Tuesday, January 7.....	Short courses in agriculture and dairying begin
Saturday, February 1.....	Annual intersociety oratorical contest
Saturday, February 15.....	Mid-term examination
Thursday, March 19.....	Annual concert
Thursday and Friday, March 26, 27.....	Examination at close of term

SPRING TERM, 1908, ELEVEN WEEKS.

Monday, March 30.....	Examination for admission, at nine A. M.
Tuesday, March 31.....	Spring term begins
Saturday, May 9.....	Mid-term examination
Tuesday, May 19.....	Beginning of summer course in domestic science
Tuesday and Wednesday, June 16, 17.....	Examination at close of year
June 14 to 18.....	Exercises of Commencement week
Thursday, June 18, at ten A. M.....	Commencement
June 19 to September 16.....	Summer vacation

FALL TERM, 1908,

Wednesday, September 16.....	Examination for admission, at nine A. M.
Thursday, September 17.....	College year begins

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(Board of Instruction concluded on last page.)

THE INDUSTRIALIST.

VOL. 34.

MANHATTAN, KAN., DEC. 21, 1907.

No. 13

Local Notes.

Winter term begins Tuesday, January 7.

A Merry Xmas and a Happy New Year to you all!

The running track of the Y. M. C. A. gymnasium is completed.

The Y. W. C. A.'s sold about 700 of their art calendars last week.

The Rooters' Club entertained the football boys last Saturday night in Kedzie Hall.

The College library will be open during the holidays all day, except Christmas day.

The Friday morning chapel concerts by the Choral Union are a highly appreciated musical treat.

Students must be present the very first day of the term or render a reasonable excuse.—*College Catalogue.*

The intersociety oratorical contest will be held February 1, instead of January 25, the date given in the College catalogue.

Professor and Mrs. Ten Eyck are the happy parents of twin girls, born December 17. The INDUSTRIALIST congratulates.

E. L. Seiber, the new assistant in Experiment Station work in the Chemistry Department, is a '04 University of Indiana man.

Mrs. A. F. Nichols arrived Tuesday from Portland, Ore., to spend the winter here with her son, Pres. E. R. Nichols, and family.

The exhibit of the corn contest will be placed in the Women's Gymnasium, and the corn-judging classes will meet in the corn-judging room on the second floor of Agricultural Hall.

Reports from all parts of the State agree that the first Kansas Alfalfa Day, December 14, was a grand success. Over 250 well-attended alfalfa meetings were held, and alfalfa received a boost as it never did before. The day will probably become a feature of the Kansas calendar, like Arbor Day.

The Chicago weekly *Live Stock Report* of December 6 prints two large and well-made half-tones of the pure-bred Angus and Short-horn herds of this College which were on exhibition at the International Life Stock Exposition, and which took first prizes there amounting to \$350.

The Poland-China sale held in the College stock-judging pavillion on Monday, December 16, by F. A. Dawley, '95, of Waldo, Kan., was a financial success in spite of the financial stringency. Forty-nine head of sows were sold at an average price of \$189.75. B. F. Ishmael, of Laredo, Mo., topped the sale at \$500. The purchasers included the principle Poland-China show-ring fitters of the following states: Illinois, Iowa, Ohio, Indiana, Missouri, Oklahoma, and Kansas. The College bought one at \$100.

Sec. W. W. McLean, of the College Y. M. C. A., will leave Manhattan for Mexico City, Old Mexico, the first of January, and Wm. Davis, who coached the second College football team this fall, will be the successor. Mr. McLean has done well with us. He is a worker and a young man of exemplary character, who leaves this institution with the best wishes of the student body and the Faculty. The new \$30,000 Y. M. C. A. Hall, now nearly completed, is largely the result of his efforts.

The State Horticultural Society will hold its annual session in the Supreme Court room of the State Capitol, at Topeka, Thursday, Friday, and Saturday, December 26 to 28. The Agricultural College will be well represented in the program. Regent Edwin Taylor is the president of the society. Prof. Charles W. Burkett will give an address on "Selection and Care of Soils for Fruit Growing," and Professor Albert Dickens will speak on "High-class Trees and Shrubs," and illustrate his subject with stereopticon views. The meetings will be open to everyone.

Among the text-books on zoölogy that have appeared during the past year, there is one that is unique. This is a laboratory manual bound in such a manner that the students' drawings may be inserted and become an integral part of the book. Twenty-one types of animals are treated, each after the same general plan. This number makes possible selections to meet the needs of different localities. The handling of the subject is clear, concise, and logical, and in practical use the book will prove itself valuable. It will be especially useful to the young teacher, for many of the stumbling-blocks in the way of the beginning laboratory instructor have been removed.—*K. U. Magazine.*

Among several items crowded out of last week's INDUSTRIALIST is the following: The reception given the junior class by the Faculty on Monday evening in the Women's Gymnasium was a very successful social event. The large hall was appropriately decorated. On the west side was a large "'09" in class colors (pink and brown) which stood out prominently. From each side of this design pink and brown streamers extended along both side walls, while overhead, in the center of the hall, there was a huge star covered with foliage and electric lights. Light refreshments were served on two tables. Professor Valley sang several selections, student McCanles played a cornet solo, and the College orchestra, about twenty in number, furnished selections at frequent intervals. About one hundred juniors were present and enjoyed the hospitality of the Faculty.

The *Students' Herald* of December 18 published a complete record of the College football team for eleven years. The figures are interesting in that they show how our team gradually forged ahead. Up to 1905 our team had but one balance in its favor at the end of the year. This was in 1898, when it beat its four opponents 32 to 16. In 1905, however, things changed. In that year the score stood 149 to 51 in our favor. In 1906 the score was 103 to 37, and this fall it was 135 to 56. Two years ago the College won five games and lost two; last year it made the same record, and this year it won five and lost three. The totals for the last three years are 387 points in favor of the College and only 144 in favor of the opposing teams. This is certainly a good showing, and what is better still is the fact that our teams have always had the name of playing and acting perfectly fair and square.

The vacancy in the Department of Dairy Husbandry at this College, caused by the resignation of Prof. O. Erf, was filled last week by the election of Prof. J. C. Kendall, the present State Dairy Commissioner. Mr. Kendall will assume the duties of the chair on January 1. He is a graduate of the New Hampshire Agricultural College and was a special student of dairy manufacturing and dairy bacteriology at the University of Ohio. He came to Kansas from North Carolina, where he was the head of the Department of Dairying of the State Experiment Station. His work in Kansas has been so satisfactory that awhile ago the Board of Regents offered him the College position, which he has now accepted. The State Dairy Commission met last week to elect a successor to Professor Kendall, and filled his present position by offering it to Mr. David M. Wilson, who for the past year has been assistant in the Department of Dairying at this College. Mr. Wilson is a graduate of the Agricultural College of Ontario, Canada. Before coming here he had been Dairy Commissioner for four years in that province. By these changes both places are now well filled.

Samples of the fall-term work of the Department of Domestic Art and by the classes in color and design were on exhibition on the second floor of Kedzie Hall last Tuesday. A good part of the exhibits remained on the walls and tables of the two large class rooms till Friday, and may remain there during the vacation in order to give the members of the State institute a chance to see it. The cold weather and the bad roads prevented many parties from coming up from town, but the rooms were at nearly all times well filled with visitors. The Domestic Art Department exhibited about 120 complete shirt-waist suits of madras, percales, linens, gingham, lawns, etc., trimmed with a great variety of laces and embroideries. There were also on exhibition about 120 suits of dainty underwear. The first-year students were represented by a number of "model-books," each containing samples of the different stitches, methods of mending, joining of laces, embroideries, etc. The highly artistic and at the same time practical character of the work drew many favorable comments from the visitors. The exhibition showed that the department is in good

hands. The exhibition of the color and design work occupied the wall space of the two large rooms. It consisted of specimens of work from the 163 girls assigned to the subject, 99 of which are domestic science short-course students, 60 juniors, and 4 seniors. About 300 designs and color drawings were shown, also 80 stencil designs applied to linen and other fabrics. The original drawings for the Y. W. C. A. calendar recently issued, which were made by the advanced class, were also on exhibition. The value of such an exhibit consists not in its mere prettiness as an exhibit, but in the fact that it shows that practical applications of the principles of order and harmony in the use of color in original designing was aimed at by the teachers. It is not so much what the student accomplishes in the class room, but how much the ability to independently originate and execute in good taste is developed that makes such a course useful. Miss Ella Weeks, of the Department of Architecture and Drawing, who had charge of these classes, is evidently on the right track. We hope that she and Miss Antonetta Becker, of the Domestic Art Department, will find time to repeat these exhibitions and make them an annual treat.

Alumni and Former Students.

Lillian Delp, former student, is teaching the second grade in the Lenora schools.

M. O. Hensley, Logan, Kan., a student for a short time a few years ago, appreciates more and more the need of such training as the College affords, and will sell out December 30, and with Mrs. Hensley move to Manhattan to get what they both can in courses that the institution offers.

Roland McKee, '00, scientific assistant in horticulture, United States Department of Agriculture, is spending a few weeks visiting friends and relatives in Riley and Marshall counties before going on to be in Washington, D. C., the first of the year. He will spend a month in Washington, then return by a more southern route to Chico, Cal., to resume his work there.

Chase Cole, second-year student in 1893-'94, owns and operates a woodworking shop in Lenora. With a gasoline engine, lathe, band-saw, buzz-saw, etc., he is kept busy on window- and door-frames, stairs, store-fronts, screens, etc. With Mrs. Cole he gave J. T. Willard, '83, a pleasant evening in their cheery home. They plan to move where trees grow better when an opportunity offers.

Abbie (Putnam) Cutting, '02, is teaching her home school in the country four miles from Lenora. She gave the school a vacation the day of the farmers' institute at Lenora in order to come in and meet the College representative, notwithstanding alleged vivid memories of his severity as a teacher. Such visits are much appreciated by the teacher. Mr. Cutting is a prosperous young farmer, but apparently did not keep Mrs. Cutting busy, so she took the school. He says it is her last, however.

Manhattan, Kansas.

Monday and Tuesday, December 30 and 31, 1907.

(Old Chapel.)

- 3:00 Corn Growing Contests Prof. A. M. Ten Eyck
Kansas State Agricultural College.
- 3:30 What Other Boys Are Doing..... Prof. F. H. Rankin
University of Illinois, Urbana, Ill.
- 4:00 Seeing the Beautiful on the Farm.....
..... Mr. Alfred Montgomery, Artist
Chicago, Ill.

(Auditorium.)

Hon. W. E. Blackburn, Presiding.

- | | | |
|------|-------------------------------|-----------------------|
| 7:30 | Music..... | College Orchestra |
| 8:00 | Education for Usefulness..... | Prof. F. H. Rankin |
| 9:00 | Art On The Farm..... | Mr. Alfred Montgomery |

8:00 Types of Stock. (Dairy Barn).....Prof. R. J. Kinzer
Kansas State Agricultural College.

10:00 Studying Corn Exhibits. (Women's Gymnasium)

11:00 Announcement of Prizes.

Manhattan, Kansas.

Monday and Tuesday, December 30 and 31, 1907.

Dairy Hall.)

- 2:00 Scoring and Judging Butter.....
.....Dairy Commissioner Kendall in charge
- 4:00 Points in Judging and Scoring Butter.....J. G. Wynkjer
Agent, United States Dairy Division.
- Discussion.

(Chemistry Building.)

- 8:00 How Cream Should be Sampled at the Receiving Station... G. E. Merritt
Great Bend.
Factory Milk and Cream Testing.....J. R. Cates
AddressHon. E. H. Webster
Chief Dairy Division, United States Department of Agriculture.

(Chemistry Building.)

- 9:00 Some Butter Defects and Their Remedies..J. G. Wynn
9:45 Creamery Records.....T. A. Borman
Topeka.
10:30 The Use of Starters in Butter Making.....D. M. Wilson
Kansas State Agricultural College.
11:15 Some Ways of Improving Kansas Butter.
General Discussion.

Kansas State Dairy Association, Manhattan, Kansas.

Tuesday and Wednesday, December 31, '07, and January 1, '08.

Tuesday Afternoon Session.

(Chemistry Building.)

- 2:00 Observations on Quality of Contest Butter, J. G. Winkjar
Agent, United States Dairy Division.
Discussion.
- 3:00 Improving Cream and Butter Quality.....J. C. Kendall
Kansas State Dairy Commissioner.
Discussion.
- 4:00 Announcing Results of Butter Makers' Contest.
Awarding Prizes. Presentation of Silver Cup.

Tuesday Evening Session.

(Old Chapel.)

- 8:00 President's Address.....T. A. Borman
President, Kansas State Dairy Association.
Dairy Economics.....R. M. Washburn
Missouri Dairy Commissioner.
Development of Dairy and Creamery Interest in
Kansas.....W. W. Marple
Ex-President Missouri Dairy Association.

Wednesday Morning Session.

(Chemistry Building.)

- 10:00 The New Year and Kansas Dairying.....D. M. Wilson
Assistant Dairy Husbandry, Kansas State Agricultural College.
Extension to Uncle Sam's Dairy Work...Ed. H. Webster
Chief, Dairy Division, United States Department of Agriculture.

Wednesday Afternoon Session.

(Chemistry Building.)

- 2:00 Building a Dairy Herd Quickly and with Smallest
Cash Outlay.....G. C. Wheeler
Assistant, Dairy Husbandry, Kansas State Agricultural College.
Discussion.
- 2:45 Practicability of Milking Machine...Henry Van Leeuwen
Dairy Farmer, Ottawa, Kansas.
- 3:30 Report of Committees; Secretary's Report; Election of
Officers.

Kansas Corn Breeders' Association.

Manhattan, Kansas.

Tuesday and Wednesday, December 31, '07, and January 1, '08.

Tuesday Afternoon Session.

2:00 Report of Some Cultural Experiments.....L. E. Call
Assistant in Agronomy, Kansas State Agricultural College.

Corn Breeding at Hays Branch Experiment Station..
.....A. D. Colliver
Assistant in Agriculture.

Some Results in Corn Breeding..... E. G. Schafer
Assistant in Agronomy, Kansas State Agricultural College.

Breeding, Selling and Shipping Seed Corn ..J. G. Haney
Oswego.

Tuesday Evening Session.

8:00 Wheat Breeding at the Kansas State Experiment Station
.....Prof. H. F. Roberts
Botanist, Kansas State Agricultural College.

Art on the Farm (Illustrated Lecture) Alfred Montgomery
Chicago, Ill.

Wednesday Morning Session.

(Women's Gymnasium.)

8:30 Business Meeting.

10:00 Studying Exhibits.

11:30 Sale of Prize Corn.

Draft Horse Breeders' Association.

Manhattan, Kansas.

Wednesday and Thursday, January 1, and 2, 1908.

Wednesday Afternoon Session.

2:00 President's Address.....H. W. Avery
Wakefield.

Report by Secretary on the Kansas Horse Situation
.....Prof. R. J. Kinzer
Kansas State Agricultural College.

The Care of the Stallion.....O. L. Thisler
Chapman.

Wednesday Evening Session.

(Held with Good Roads Association.)

Thursday Morning Session.

8:30 Judging Horses.

Kansas Good Roads Association

Manhattan, Kansas.

Wednesday and Thursday, January 1 and 2, 1908.

Wednesday Afternoon Session.

(Old Chapel.)

- 2:00 Address of Welcome.....Pres. E. R. Nichols
 Response.....Hon. Bradford Miller
 Reports of Officers.
 Appointment of Committees.
 Address.....Mr. Wesley Merritt
 Industrial Commissioner A. T. & S. F. R. R.
-

Wednesday Evening Session.

(Old Chapel.)

- 8:00 Good Roads From a Granger's Point of View.....
Hon. E. W. Westgate
 National Grange.
 Good Roads Laws; Breach and Observance.....
Hon. S. A. Kimble
 Address.....Mr. S. A. Lancaster
 Consulting Engineer Office of Public Roads.
-

Thursday Morning Session.

(Old Chapel.)

- 9:30 Reports of Committees.
 Election of Officers.
 Address.....Mr. F. S. White
 Agricultural and Horticultural Commissioner R. I.—Frisco Lines.
 Good Roads From A Mail Service Standpoint.....
Inspector C. A. Mills
 Post-Office Department.

Kansas
State Veterinary Medical Association,
 Manhattan, Kansas.

Thursday and Friday, January 2 and 3, 1908.

Thursday Morning Session.

(Chemistry Building.)

10:00 Business Meeting.

Thursday Afternoon Session.

(Chemistry Building.)

2:00 Address of Welcome.....E. R. Nichols
 President Kansas State Agricultural College.
 President's Address.....Dr. Pritchard
 Topeka.
 Tuberculosis in Dairy Herds.....Prof. J. C. Kendall
 Kansas State Agricultural College.
 The Agglutination Method of Detecting Glanders....
Prof. Walter E. King
 Kansas State Agricultural College.
 Ptomain Poisoning.....Dr. W. M. Hobbs
 Smith Center.

Thursday Evening Session.

(Old Chapel.)

8:00 Report of Cases.
 Courses of Study..... Dr. Burton R. Rogers
 Kansas State Agricultural College.
 Castrations—Standing Operations.....Dr. C. Saunders
 Emporia.

Friday Morning Session.

(Veterinary Laboratory.)

9:00 Clinic.

Friday Afternoon Session.

(Old Chapel.)

2:00 Address..... Dr. C. W. Burkett
 Director Kansas Experiment Station.
 External Parasites.....Dr. I. P. Kirchner
 Canine PracticeDr. L. W. Goss
 Kansas State Agricultural College.
 Paper.....Dr. F. W. Caldwell
 Wamego.
 Paper.....C. B. Kern
 Beloit.

Cattle Breeders' Conference.

Manhattan, Kansas.

Thursday and Friday, January 2 and 3, 1908.

Thursday Afternoon Session.

(In the Agricultural Hall.)

2:00 □ Shorthorn Breeders' Business Session.

Hereford Breeders' Business Session.

3:00 General Conference: (A 40.)

The Live Stock Show as an Educator....A. L. Sponsler
Hutchinson.

Economical Beef Production.....Prof. R. J. Kinzer
Kansas State Agricultural College.

Starting a Pure-Bred Herd.....C. R. Thomas
Secretary American Hereford Association, Kansas City, Mo.

Thursday Evening Session.

(In Old Chapel.)

Hon. A. M. Story, Presiding.

8:00 Opportunities for the Pure-Bred Breeder in the West
.....Col. W. E. Skinner
Denver, Colo.

Mexico as a Market.....Col. W. A. Harris
Lawrence.

Friday Morning Session.

8:30 Judging Breeds of Cattle.

Swine Breeders' Conference.

Manhattan, Kansas.

Friday and Saturday, January 3 and 4, 1908.

Friday Afternoon Session.

(In Agricultural Hall.)

- 2:00 Poland-China Breeders' Business Meeting.
Duroc-Jersey Breeders' Business Meeting.
Berkshire Breeders' Business Meeting.
- 3:00 Swine Breeders' Conference—Joint Session:
The Hog and the Hog Business of the Future.....
..... Frank D. Winn
..... Randolph, Mo.
Public Sales, Shall We Encourage Them?... W. F. Guthrie
..... Strong City.
Plans and Suggestions for Arranging Sales, Dates,
and Circuits..... L. R. Brady
..... Manhattan.
A Kansas State Fair M. G. Hamm
..... Holton.
Needed Legislation..... J. J. Ward
..... Belleville.
Discussions: C. A. Stannard, Emporia.
Geo. Hammond, Manhattan.

Friday Evening Session.

(Old Chapel.)

Hon. Edwin Taylor, Presiding.

- 8:00 The Hog for the Packer..... Dr. F. L. DeWolf
..... Topeka.
Swine and the Swine Herd..... A. Glenn
..... Chicago, Ill.
Kansas as a Pure-Bred Hog State..... R. F. Howard
Editor Breeders' Special, Kansas City, Mo.

Saturday Morning Session.

- 8:00 Judging Hogs..... E. E. Axline.....
..... Oak Grove, Mo., (To assist with Poland Chinas).
- 10:00 Joint Session:
Are Swine Breeders too Extravagant in Advertising?
..... F. A. Dawley
..... Waldo.
- Quality or Coarseness—Which? } C. G. Nash, Eskridge
} W. H. Rhoades, Tampa
- Symposium—Feeding the Brood Sow:
E. D. King, Burlington.
J. M. Neilson, Marysville.
G. D. Williams, Inman.

Special Meeting of Duroc-Jersey breeders called for January 2,
at 2 P. M., in Agricultural Hall.

Corn Exhibits in Women's Gymnasium.

FARMERS' WEEK

Kansas State Agricultural College,

Manhattan, Kan., December 30 to January 4.

(State Farmers' Institute, December 26 to January 4.)

Convention Calendar.

Monday, December 30.

- 2:00 P. M. Boys' Corn Contest Association. A 40.
 Kansas Butter Makers' Conference. D 31.
 8:00 P. M. Boys' Corn Contest Association. M.
 Butter Makers' Convention. C 26.

Tuesday, December 31.

- 8:00 A. M. Butter Scoring Contest.
 Boys' Contest Association.
 2:00 P. M. State Corn Breeders' Association. A 40.
 State Dairy Association. C 26.
 8:00 P. M. State Corn Breeders' Association. M.
 State Dairy Association. A 40.

Wednesday, January 1.

- 8:00 A. M. State Corn Breeders' Association. G 52.
 Inspecting Creamery and Creamery Supplies.
 10:00 A. M. State Dairy Association Meeting. C 26.
 2:00 P. M. State Good Roads Association. A 40.
 Draft Horse Breeders' Association. G 52.
 State Dairy Association. C 26.
 8:00 P. M. Good Roads Association. A 40.
 Draft Horse Breeders' Association. A 40.

Thursday, January 2.

- 8:00 A. M. Inspection of Road Making Machinery.
 Special Judging of Stallions and Mares.
 10:00 A. M. Good Roads Association. A 40.
 Draft Horse Association. G 52.
 2:00 P. M. State Veterinary Medical Association. C 26.
 Aberdeen-Angus Association. G 52.
 Shorthorn Association. G 53.
 Hereford Association. G 51.
 3:00 P. M. Cattle Breeders' Joint Session. A 40.
 8:00 P. M. Cattle Breeders' Meeting. A 40.
 State Veterinary Medical Association. C 26.

Friday, January 3.

- 8:00 A. M. Judging Three Breeds of Cattle.
 Kansas State Veterinary Association (clinic).
 2:00 P. M. Poland-China Association. G 52.
 Duroc-Jersey Association. G 53.
 Berkshire Association. G 51.
 3:00 P. M. Swine Breeders' Conference. C 26.
 8:00 P. M. Swine Breeders' Conference. A 40.

Saturday, January 4.

- 8:00 A. M. Judging Hogs.
 10:00 A. M. Swine Breeders' Conference. C 26.

A=Main Building.
 C=Chemistry Building.
 D=Dairy Hall.

G=Agricultural Hall.
 M=Auditorium.

Board of Instruction (concluded).

JACOB LUND, M. S. (K. S. A. C.)	Superintendent Heat and Power Department
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Miss Anna I. McKirahan	Assistant in Music
Miss Margaret Mack (K. S. N.)	Assistant in Preparatory Department
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Orin A. Stevens, B. S. (K. S. A. C.)	Assistant in Botany
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G. A. Porteous	Herdsman
Wm. A. Lamb	Poultryman
Floyd Howard	Farm Foreman
William R. Lewis	Custodian

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# The Industrialist.

|                          |                 |
|--------------------------|-----------------|
| PRES. E. R. NICHOLS..... | Editor-in-Chief |
| PROF. J. D. WALTERS..... | Local Editor    |
| PROF. J. T. WILLARD..... | Alumni Editor   |

## TERMS AND VACATIONS.

### FALL TERM, 1907, THIRTEEN WEEKS.

Thursday and Friday, December 19, 20..... Examination at close of term

### WINTER TERM, 1908, TWELVE WEEKS.

Monday, January 6..... Examination for admission, at nine A. M.

Tuesday, January 7..... Winter term begins

Tuesday, January 7..... Short courses in agriculture and dairying begin

Saturday, February 1..... Annual intersociety oratorical contest

Saturday, February 15..... Mid-term examination

Thursday, March 19..... Annual concert

Thursday and Friday, March 26, 27..... Examination at close of term

### SPRING TERM, 1908, ELEVEN WEEKS.

Monday, March 30..... Examination for admission, at nine A. M.

Tuesday, March 31..... Spring term begins

Saturday, May 9..... Mid-term examination

Tuesday, May 19..... Beginning of summer course in domestic science

Tuesday and Wednesday, June 16, 17..... Examination at close of year

June 14 to 18..... Exercises of Commencement week

Thursday, June 18, at ten A. M. .... Commencement

June 19 to September 16..... Summer vacation

### FALL TERM, 1908,

Wednesday, September 16..... Examination for admission, at nine A. M.

Thursday, September 17..... College year begins

## BOARD OF REGENTS.

|                                                        |              |
|--------------------------------------------------------|--------------|
| HON. A. M. STORY, President.....                       | Manhattan    |
| HON. J. O. TULLOSS ['99], Vice-President.....          | Sedan        |
| HON. J. S. McDOWELL.....                               | Smith Center |
| HON. GEO. P. GRIFFITH.....                             | Hays         |
| HON. EDWIN TAYLOR.....                                 | Edwardsville |
| HON. W. E. BLACKBURN.....                              | Anthony      |
| PRES. E. R. NICHOLS, Secretary <i>ex-officio</i> ..... | Manhattan    |

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|                                                                                         |                                                    |
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| JULIUS T. WILLARD, M. S. (K. S. A. C.).....                                             | Vice-Director Exp. Station, Professor of Chemistry |
| BENJ. L. REMICK, Ph. M. (Cornell College).....                                          | Professor of Mathematics                           |
| BENJ. F. EYER, B. S. (Armour Inst. of Tech.).....                                       | Prof. of Physics and Electrical Engineering        |
| HERBERT F. ROBERTS, A. B. (U. of K.), M. S. (K. S. A. C.).....                          | Professor of Botany                                |
| WILLIAM A. MCKEEVER, Ph. M. (Univ. of Chicago).....                                     | Professor of Philosophy                            |
| EDMUND B. MCCORMICK, S. B. (Mass. Inst. Tech.).....                                     | Prof. of Mech. Engineering, Supt. of Shops         |
| ALBERT DICKENS, M. S. (K. S. A. C.).....                                                | Professor of Horticulture, Supt. of Grounds        |
| CLARK M. BRINK, A. M. (U. of R.), Ph. D. (Univ. of City of New York).....               | Professor of English                               |
| ALBERT M. TEN EYCK, B. Agr. (Wisconsin).....                                            | Professor of Agronomy, Supt. of Farm               |
| MRS. HENRIETTA W. CALVIN, B. S. (K. S. A. C.).....                                      | Professor of Domestic Science                      |
| RALPH R. PRICE, A. M. (U. of K.).....                                                   | Professor of History and Civics                    |
| JULIUS E. KAMMEYER, A. M. (Central Wesleyan College).....                               | Professor of Economics                             |
| CHAS. H. BOICE, First Lieutenant Seventh Cavalry, U. S. A.....                          | Professor of Military Science                      |
| JOHN V. CORTELYOU, A. M. (Uni. of Neb.), Ph. D. (Heidelberg).....                       | Professor of German                                |
| OLOF VALLEY, B. M. (Chicago Conservatory).....                                          | Professor of Music                                 |
| F. S. SCHOENLEBER, D. V. S. (Chicago Vet. College).....                                 | Professor of Veterinary Science                    |
| ROLAND J. KINZER, B. S. A. (Iowa State College).....                                    | Professor of Animal Husbandry                      |
| WALTER E. KING, M. S. (Cornell).....                                                    | Professor of Bacteriology                          |
| THOMAS J. HEADLEE, Ph. D. (Cornell).....                                                | Professor of Entomology                            |
| .....                                                                                   | Professor of Dairy Husbandry                       |
| JOSHUA D. RICKMAN.....                                                                  | Superintendent of Printing                         |
| MISS MARGUERITE E. BARBOUR (Sargent Nor. Sch. Phys. Tr.), Director of Physical Training |                                                    |
| MISS ANTONETTA BECKER (Drexel).....                                                     | Superintendent of Domestic Art                     |
| MISS ANNE M. BOYD, A. B. Lib. Sci. (Millikin).....                                      | Librarian                                          |
| ROBERT J. BARNETT, B. S. (K. S. A. C.).....                                             | Principal Preparatory Department                   |

(Board of Instruction concluded on last page.)

# THE INDUSTRIALIST.

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No. 14

## ***Prize Winners at the Kansas State Corn Show.***

The annual meeting of the Kansas Corn Breeders' Association and the Boys' Corn Contest Association held at the Kansas State Agricultural College, Manhattan, Kan., from December 30 to January 1 was the largest in the history of these organizations. These meetings were preceeded by practical work in corn and stock judging, which began on December 26, 384 men and boys enrolling in classes for the work.

In connection with these meetings a large exhibit of corn was shown. In all 217 exhibits were entered, as follows: 162 boys' exhibits, 28 yellow corn exhibits for men, 22 white corn exhibits for men, 5 mixed corn exhibits for men. The corn exhibited by the men was sold to help defray the expenses of the association, while the corn exhibited by the boys was returned to the boy exhibiting the corn for planting for next season's crop. The following is a list of prize winners:

### **BOYS' CONTEST.**

#### **FOR BEST EAR.**

Cunningham, R. M., Hiawatha, Kansas, Prize \$50 Painting.

#### **FOR BEST TEN EARS.**

1. Snyder, Oaklan, Hiawatha, Reid Yellow Dent.
2. Cunningham, R. M., Hiawatha, Reid Yellow Dent.
3. Olson, Lloyd, Lyndon, Boone County White.
4. Gilman, Ralph, Leavenworth, Boone County White.
5. Allen, Harry, Manhattan, Hildreth Yellow Dent.
6. Gilman, Paul, Leavenworth, Boone County White.
7. Coffman, Franklin, Manhattan, Hildreth Yellow Dent.
8. Shannon, John, Hiawatha, Reid Yellow Dent.
9. Moser, Carl, Hiawatha, Boone County White.
10. Reitz, Aron, Olathe, Boone County White.
11. Tregenba, Will, Overbrook, Boone County White.
12. Kelsey, Myron, North Topeka, Reid Yellow Dent.
13. Kelsey, A. L., North Topeka, Boone County White
14. Moffit, Clyde, Wilder, Boone County White.
15. Richter, Lewis, Holton, Boone County White.
16. Coffman, Will, Manhattan, Hildreth Yellow Dent.
17. Carman, Howard, Pomona, Boone County White.

18. Kimball, Ray, North Topeka.
19. Carmen, Bengil, Pomona, Boone County White.
20. McCullough, Ray, Ottawa, Boone County White.
21. Martin, Charles B., Silver Lake, Boone County White.
22. Brown, Paul, Olathe, Boone County White.
23. Cochran, Lloyd, North Topeka, Boone County White.
24. Strange, Walter, Blue Rapids, Boone County White.
25. Wright, Herbert, Tonganoxie, Boone County White.
26. Quinn, Walter, Bennington, Boone County White.
27. Huffman, Glen, Westmoreland, Hildreth Yellow Dent.
28. Eubanks, Frank, Holton, Reid Yellow Dent.
29. Fulmer, Allen, Wamego, Hildreth Yellow Dent.
30. Creighton, Alexander, Morrowville, Boone County White.
31. Reid, Lewis, Olathe, Boone County White.
32. Badger, Fred, Yates Center, Hildreth Yellow Dent.
33. Willis, Earl, Manhattan, Boone County White.
34. McIntire, Max, Pomona, Boone County White.
35. Willis, Homer, Manhattan, Boone County White.

## ACRE YIELD CONTEST.

1. J. M. Gilman, Leavenworth, Yield 114 bushels and 49 pounds per acre.
2. Paul Gilman, Leavenworth, Yield 107 bushels per acre.
3. J. T. Martin, Hanover, Yield 81 bushels and 20 pounds per acre.

## MEN'S ACRE YIELD CONTEST.

## YELLOW CORN.

1. Trent, S. G., Hiawatha, Reid Yellow Dent.
2. Flaherty, Ed, Seneca, Reid Yellow Dent.
3. Haney, J. G., Oswego, Hildreth.
4. Lind, John, Saffordville, Hildreth.
5. Rogers, N., Seneca, Reid Yellow Dent.

## WHITE CORN.

1. Flaherty, Ed., Seneca, Boone County White.
2. Gilman, J. M., Leavenworth, Boone County White.
3. Rea, Herman, Haddam, Rea's Snowflake.
4. Trent, S. G., Hiawatha, Boone County White.
5. Sanford, L. V., Oneida, Sanford's Improved.

## MIXED CORN.

1. Wilson, E., Lawrence, Bloody Butcher.
2. Coffman, E. B., Manhattan, Bloody Butcher.

## SWEEPSTAKES.

1. Trent, S. G., Hiawatha, Reid Yellow Dent.
2. Flaherty, Ed., Seneca, Reid Yellow Dent.
3. Haney, J. G., Oswego, Hildreth.
4. Flaherty, Ed., Seneca, Boone County White.
5. Gilman, J. M., Leavenworth, Boone County White.

Judges of boys' corn.—L. E. Call, E. G. Schafer, A. B. Cron.

Judges of men's corn.—R. W. Hull, C. Doryland, F. C. Miller.

Prof. A. M. TenEyck, of the Agricultural College, and Mr. Arnold Martin, DuBois, Neb., made the final awards.

## PURCHASERS OF PRIZE CORN.

## YELLOW CORN.

|                                                               |         |
|---------------------------------------------------------------|---------|
| First premium, Trent, S. G., Hiawatha, Reid Yellow Dent.....  | \$18 00 |
| Second premium, Kelsey, Mr., N. Topeka, Reid Yellow Dent..... | 20 00   |
| Third premium, Ten Eyck, A. M., Manhattan, Hildreth.....      | 9 00    |
| Fourth premium, Lind, John, Saffordville, Hildreth.....       | 6 00    |
| Fifth premium, Hamm, M. G., Holton, Reid Yellow Dent.....     | 8 00    |

## WHITE CORN.

|                                                                  |         |
|------------------------------------------------------------------|---------|
| First premium, Martin, J. T., Hanover, Boone County White.....   | \$13 00 |
| Second premium, Gilman, J. M., Leavenworth, Boone County White.. | 8 00    |
| Third premium, Bayer, Henry, Toronto, Rea's Snowflake.....       | 1 00    |
| Fourth premium, McCray, J. M., Manhattan, Boone County White.... | 2 00    |
| Fifth premium, Sanford, L. V., Oneida, Sanford's Improved.....   | 1 00    |

## MIXED CORN.

|                                                                  |        |
|------------------------------------------------------------------|--------|
| First premium, Martin, Arnold, DuBois, Neb., Bloody Butcher..... | \$5 00 |
| Second premium, Coffman, E. B., Manhattan, Bloody Butcher.....   | 1 00   |

Some twenty-five or thirty samples were also sold at auction and private sale, ranging in price from 50 cents to \$3.00 per sample of ten ears. The total sale of exhibition corn was \$131.

## PRIZES AND DONORS.

In the boys' contest a special prize of a farm painting, valued at \$50, for best ear of corn, was given by Alfred Montgomery.

## BEST TEN EARS OF CORN.

|                                                                                                                                     | Value   |
|-------------------------------------------------------------------------------------------------------------------------------------|---------|
| 1. Two-row cultivator, Midland Implement Co., Tarkio, Mo.....                                                                       | \$55 00 |
| 2. Brome grass seed, F. Barteldes & Co., Lawrence, and \$12 in cash..                                                               | 37 00   |
| 3. Plush lap-robe, Bardwell Implement Co., Manhattan, one bushel<br>choice alfalfa seed, Ross Bros., Wichita, and \$10 in cash..... | 28 00   |
| 4. Gold-handled umbrella, Jno. L. Coons, Manhattan, one bushel<br>alfalfa seed, Ross Bros., Wichita, and \$10 in cash.....          | 25 00   |
| 5. Stetson hat, W. S. Elliot, Manhattan, and \$15 in cash.....                                                                      | 20 00   |
| 6. Gent's furnishings to value of \$5 at E. L. Knostman's, Manhattan,<br>and \$10 in cash.....                                      | 15 00   |
| 7. One pair \$4 shoes at Moore Bros. & Co., Manhattan, and \$6 in<br>cash.....                                                      | 10 00   |
| 8. Hildreth seed-corn to value of \$5, J. M. McCray, Manhattan, and<br>three-years' subscription to <i>Kansas Farmer</i> .....      | 8 00    |
| 9. Two bushels first-grade seed-corn, Agronomy Department, K. S.<br>A. C.....                                                       | 6 00    |
| 10. Five-years' subscription to <i>Farm and Stock</i> .....                                                                         | 5 00    |
| 11. Three-years' subscription to <i>Breeders' Special</i> .....                                                                     | 3 00    |
| 12. Three-years' subscription to <i>Farm and Stock</i> .....                                                                        | 3 00    |
| 13. Two-years' subscription to <i>Kansas Farmer</i> .....                                                                           | 2 00    |
| 14. Two-years' subscription to <i>Breeders' Special</i> .....                                                                       | 2 00    |
| 15. One-years' subscription to <i>Wallaces' Farmer</i> .....                                                                        | 1 00    |
| 16. One-years' subscription to <i>Wallaces' Farmer</i> ...                                                                          | 1 00    |
| 17. One-years' subscription to <i>Farmers' Advocate</i> .....                                                                       | 1 00    |
| 18. One-years' subscription to <i>Farm and Stock</i> .....                                                                          | 1 00    |
| 19. One-years' subscription to <i>Farm and Stock</i> .....                                                                          | 1 00    |
| 20. One-years' subscription to <i>Farm and Stock</i> .....                                                                          | 1 00    |
| 21. One-years' subscription to <i>Farm and Stock</i> .....                                                                          | 1 00    |

- |                                                               |      |
|---------------------------------------------------------------|------|
| 22. One-years' subscription to <i>Breeders' Special</i> ..... | 1 00 |
| 23. One-years' subscription to <i>Breeders' Special</i> ..... | 1 00 |
| 24. One-years' subscription to <i>Breeders' Special</i> ..... | 1 00 |
| 25. One-years' subscription to <i>Breeders' Special</i> ..... | 1 00 |

For each of the next ten best ten ears of corn, one-years' subscription to the *Farmers' Advocate*.

#### MEN'S CONTEST.

##### *Class A.—Largest Yield of Corn per Acre.*

- |                                                                                                                                         |         |
|-----------------------------------------------------------------------------------------------------------------------------------------|---------|
| 1. Pair of Humane Horse Collars, Humane Horse Collar Co., Omaha, Neb., and three-years' subscription to <i>Farmer and Stockman</i> .... | \$18 00 |
| 2. Boss Corn Grader, Kingman-Moore Implement Co., Kansas City, Mo., and three-years' subscription to <i>Farmer and Stockman</i> .....   | 13 00   |
| 3. Barrel Iowa Hog Powder, J. R. McKean, Manhattan,.....                                                                                | 13 00   |

##### *Class B.—Best Ten Ears Yellow Corn.*

- |                                                                                                                                         |       |
|-----------------------------------------------------------------------------------------------------------------------------------------|-------|
| 1. Black Hawk Corn Planter, M. D. Sechler Carriage Co., Moline, Ill., and \$5 in advertising in <i>Kansas Farmer</i> .....              | 47 00 |
| 2. Selected seed-corn and seed-potatoes, Geo. T. Fielding & Sons, Manhattan, and five-years' subscription to <i>Kansas Farmer</i> ..... | 30 00 |
| 3. Double-barrel shot-gun, E. B. Purcell Trading Co., Manhattan, and five-years' subscription to <i>Farm and Stock</i> .....            | 17 50 |
| 4. Single-buggy harness, Brady Harness Co., Manhattan, and one-years' subscription to <i>Farmers' Advocate</i> .....                    | 11 00 |
| 5. One barrel of flour, Manhattan Milling Co., Manhattan, and one-years' subscription to <i>Wallaces' Farmer</i> .....                  | 6 00  |

##### *Class C.—White Corn.*

- |                                                                                                                                                                       |       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| 1. Alfalfa seed, 160 pounds, J. G. Peppard Seed Co., Kansas City, Mo., endgate seeder, C. E. Hildreth, Altamont, and \$5 in advertising in <i>Kansas Farmer</i> ..... | 40 00 |
| 2. Selected Boone County seed-corn, J. M. Gilman, Leavenworth, and five-years' subscription to <i>Farm and Stock</i> .....                                            | 30 00 |
| 3. Single harness, J. B. Anderson, Manhattan, and five-years' subscription to <i>Breeders' Special</i> .....                                                          | 17 00 |
| 4. Selected Silvermine seed-corn, E. W. Young, Lawrence, and two-years' subscription to <i>Farmers' Review</i> .....                                                  | 9 50  |
| 5. Five dollars in groceries at the Star Grocery, Manhattan, and one-years' subscription to <i>Wallaces' Farmer</i> .....                                             | 6 00  |

##### *Class D.—Mixed.*

- |                                                                                                                |         |
|----------------------------------------------------------------------------------------------------------------|---------|
| 1. Keystone Hand Sheller, International Harvester Co., Chicago, Ill..                                          | \$10 00 |
| 2. Set knives and forks, E. L. Askren, Manhattan, and one-year's subscription to <i>Wallaces' Farmer</i> ..... | 6 00    |

##### *Sweepstakes.*

- |                                                                                                                       |       |
|-----------------------------------------------------------------------------------------------------------------------|-------|
| 1. Fifty-pound can lard, Schultz Bros., Manhattan, and \$10 in cash..                                                 | 15 00 |
| 2. Ham, Allingham & Beattie, Manhattan, and \$10 in cash.....                                                         | 13 00 |
| 3. Sterling Silver Teaspoons, J. Q. A. Sheldon, Manhattan, and one-year's subscription to <i>Topeka Capital</i> ..... | 10 00 |
| 4. Ladies' fur, Spot Cash, Manhattan, and three-years' subscription to <i>Farmer and Stockman</i> .....               | 8 00  |
| 5. Merchandise at E. A. Wharton's, Manhattan.....                                                                     | 5 00  |

## CASH DONERS.

|                                                  |         |
|--------------------------------------------------|---------|
| J. T. Martin, Hanover.....                       | \$15 00 |
| Ernest W. Young, Lawrence.....                   | 5 00    |
| First National Bank, Manhattan.....              | 10 00   |
| Union National Bank, Manhattan.....              | 10 00   |
| W. R. Hildreth, Altamont.....                    | 5 00    |
| M. L. Hull & Son, Manhattan.....                 | 5 00    |
| Ramey Bros., Manhattan.....                      | 5 00    |
| Manhattan Ice, Light & Power Co., Manhattan..... | 5 00    |
| Manhattan State Bank, Manhattan.....             | 5 00    |
| C. A. Haulenbeck Lumber Co., Manhattan.....      | 5 00    |
| Paine Furniture Co., Manhattan.....              | 2 00    |
| Wm. M. Stingley & Co., Manhattan.....            | 2 00    |
| J. J. Paddock & Son, Manhattan.....              | 2 00    |
| The Star Café, Manhattan.....                    | 2 00    |
| H. H. Bates, Manhattan.....                      | 2 00    |
| S. N. Higinbotham, Manhattan.....                | 2 00    |

***A Course for Teachers of Agriculture.***

E. T. Fairchild, State superintendent of public instruction, has received formal notification from the United States commissioner of education that, through an additional appropriation made by the federal government to the Kansas State Agricultural College, it will be possible to provide a special course at the Agricultural College for the preparation of teachers to teach elementary agriculture in the public schools of the State.

"It will be a great thing for the public schools and the public school-teachers of Kansas," said Mr. Fairchild, "for this is an agricultural state, and we are trying, year by year, to strengthen the elementary agriculture courses which are offered in the public schools. Many teachers feel the need of special training in teaching this branch, and the action of the federal government enables the State Agricultural College to offer such facilities to the teachers of the State. They will be able to take a summer course in this department at the Agricultural College, and fit themselves for teaching this branch."

The bill which carried the appropriation for the special training of teachers for elementary agriculture was enacted at the last session of congress. It increases the federal appropriation for state agricultural colleges \$5,000 a year for the next four years, and terminates with this provision: "Provided, That said colleges may use a portion of this money for providing courses for the special preparation of instructors for teaching the elements of agriculture and the mechanical arts."

In his letter to Mr. Fairchild, the United States commissioner of education says: "Special attention is invited to that part of the

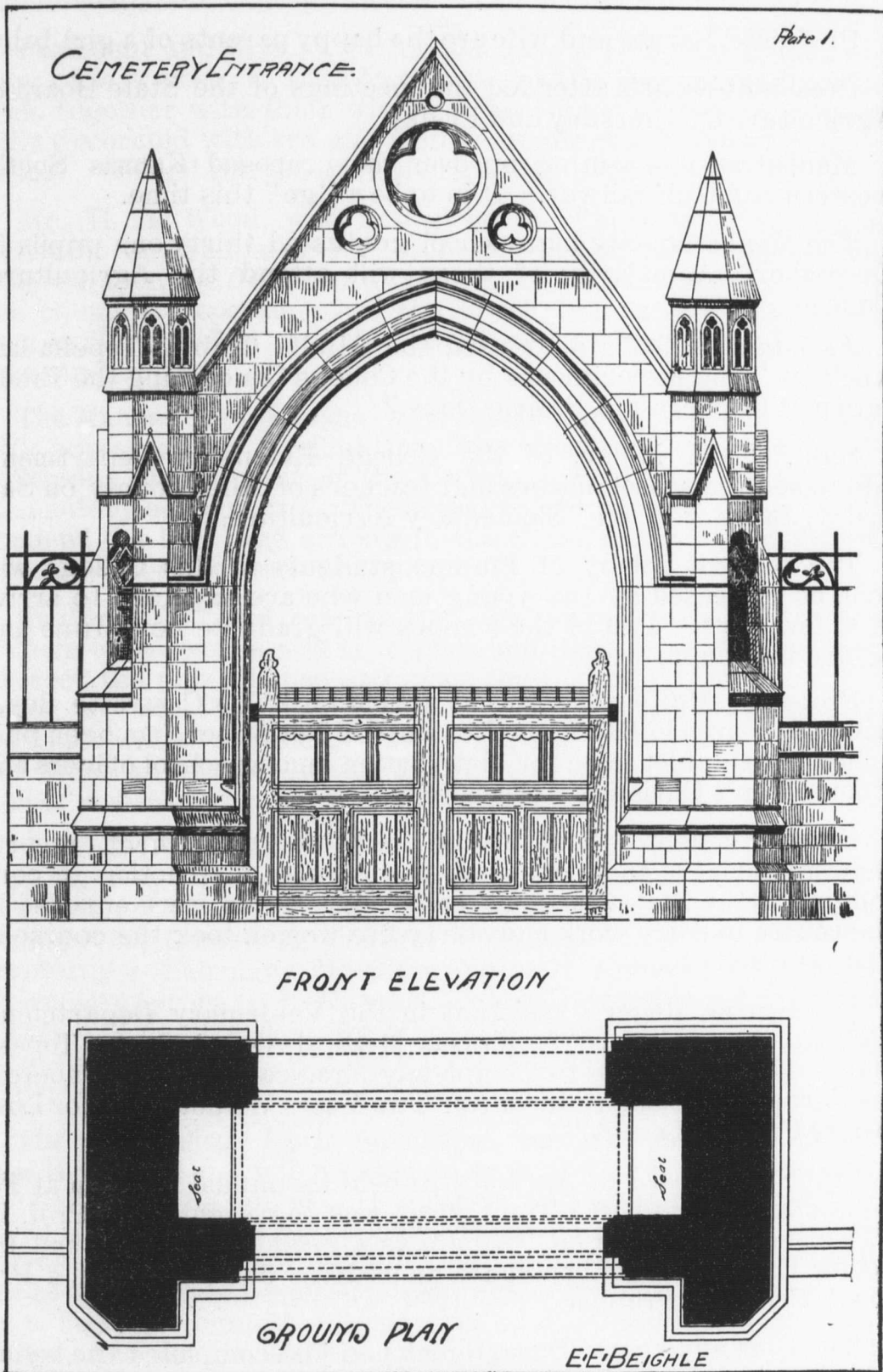
new law providing that a portion of the increase of the appropriation may be used by the institutions 'for providing courses for the special preparation of instructors for teaching the elements of agriculture and the mechanic arts.' With the increasing number of secondary schools of agriculture and of industrial and trade schools, and with the introduction of agriculture into the courses of study of elementary and high schools, there will arise a considerable demand for specially prepared teachers to give instruction in the special branches of study. To meet this demand congress has provided that a portion of the new appropriation may be expended for this special purpose."—*State Journal*.

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### ***An Architectural Composition.***

The cemetery entrance printed with this article is a composition by one of the students of the course in architecture. It is original to the extent to which student compositions are expected to be and to which practical architectural work usually is. The student was requested to study a number of such entrances in illustrated magazines. He had also received a course of lectures on Gothic art and architecture and had written several essays on the origin, growth, character and ultimate decline of this style. When he was given the problem he knew what was wanted. He drew several plates of elevations, plans and sections of the entrance, selecting for its type the gate of an old English churchyard. He inked it with the drawing pen and shaded it with the writing pen, and the figure shows the degree of his success.

The Gothic style of architecture, though at present used almost exclusively for ecclesiastic buildings, will never become entirely obsolete. It will be used as long as there will be Christian churches built. From the standpoint of the artist it is the most original and complete style of the past. It represents a country, a climate, and a building material. It represents Germanic thought and the religion of an intensely religious period. It stands for all of this so positively that it can not be transferred to another period or another purpose. The political, commercial and industrial life of the Germanic people has undergone a complete change since this peculiar architecture was developed, but its religious life has not changed much. It is for this reason that the Gothic style is still the accepted style for nine-tenths of the church buildings of northern Europe and America. The graveyard is only an extension of the churchyard.



**Local Notes.**

Over 1900 students present this term.

Professor Barnes and wife are the happy parents of a girl baby.

President Nichols attended the meetings of the State Board of Agriculture on Thursday and Friday.

Manhattan is warming up over the proposed Kansas Southwestern and Gulf railway. It is to be a "go" this time.

The Manhattan city high school graduated thirty-one pupils in December. A majority of these will attend the Agricultural College.

Assistant Scheffer addressed the Alfalfa Club at Topeka last week on "The Experiments by the College Concerning the Eradication of Gophers and Prairie-Dogs."

Supt. J. H. Miller, of the College Extension Department, addressed the school officers and teachers of Allen county on Saturday, January 11, on "Elementary Agriculture."

The present colony of Filipino students at this College will soon be increased by two young men who are expected to arrive in a few days. Two of the seniors will graduate next June and return to Manila.

Professor McKeever's recent article on "The Cigarette Boy," which appeared in *Education* (Boston) for November, has been published in pamphlet form for distribution among school officers and Young Men's Christian Associations.

Superintendent Miller, of the Institute Department, reports that 384 farmers and boys took the regular instruction in corn judging at the State Farmers' Institute. Seven were enrolled in the course in dairy work and thirty-five women took the course in domestic science.

Dr. Burton Rogers, assistant in the Veterinary Department, gave an address before the Kansas Medical Association at Topeka last week on "A Plan to Completely Eradicate Animal Tuberculosis from this Country in One or Two Years Without Cost or Loss Above Present Losses."

The State Board of Agriculture held its annual meeting at Topeka, January 8 to 10. The College was represented by Prof. R. J. Kinzer, who spoke on "Alfalfa as a Feed for Swine," and Director C. W. Burkett, who gave an address on "Selection, a Primary Breeding Problem."

The Heat and Power Department has just completed the laying of a four-inch cast-iron pipe line for furnishing water for the new Domestic Science and Art Hall and several fire plugs on the south campus. This extension of the water-works system has cost the College about a thousand dollars.

Professor Headlee made a vacation trip back to his old home in Indiana and attended the meetings of the Association of Economic Entomologists in Chicago December 27 and 28.

President and Mrs. E. R. Nichols gave a reception Friday evening of last week, at East Parkgate, for the Regents and professors, together with their wives. The roomy parlors were tastefully decorated with red and white carnations and looked very inviting. Colonel Harris, of Lawrence, was present.

Mr. H. A. Wood, who has given very acceptable service as assistant in chemistry for over two years, has resigned and entered upon the duties of a much more remunerative position in the chemical department of the North Dakota Agricultural College at Fargo. Mr. and Mrs. Wood will be much missed in College circles.

The Kansas City (Kansas) high school has ordered one hundred fifty copies of the Agricultural Education Series issued by the Extension Department of the College and will use the same for elementary agriculture. These pamphlets are now being used in some of the best high schools in the State, and will lead the way to more extensive work next year.

Engineer J. Lund reports that the suction pipe for the new College water-works well is in place and that he is getting ready to erect the pump house and place the pumping machinery. He hopes to have the whole plant in operation by February. The old plant will be retained. It will require both plants to furnish the necessary water during the summer season. The consumption of water has grown rapidly the past two years.

The following basket-ball dates have been arranged for the College team by Professor Cortelyou: January 15, Nebraska State University; January 23, Highland Park College, Des Moines, Ia.; January 30, Lindsborg College; February 11, Kansas Wesleyan (probably); February 21, State Normal; February 25, Ottawa University (probably); March 4, Baker University. All of these games will be played in the Manhattan skating-rink. Doors will be open at 7:30 P. M. Season tickets will be \$1.25; single tickets, 25 cents.

The new College Lyric for chapel exercises and social gatherings is printed and will be used as soon as a sufficient number of the books can be bound. It is a neat and well-printed pamphlet of 92 pages, containing about 75 religious and a dozen or more patriotic and College songs. An appendix contains a number of appropriate responsive readings. The compiling was done by a Faculty committee consisting of Professors Valley, Kam-meyer, and Brink, and the printing is the work of the College Printing Department. The new Lyric is the third published by the College for the same purpose, and an improvement in every respect over the previous ones. May it become a source of devotion and inspiration as its "older sisters" have been.

Judge Sam Kimble, '73, addressed the Good Roads Association upon "Road Laws." He handled the subject with his characteristic force and sound sense and awakened much interest.

J. G. Haney, '99, Oswego, Kan., won the third premium with his Hildreth's Yellow Dent corn, and also the third sweepstakes. He presented a paper before the Corn Breeders Association on "Breeding, Selling and Shipping Seed-Corn."

Dr. Mac F. Hulett, '93, Columbus, O., gave an address before the Ohio Osteopathic Society at its tenth annual meeting December 28. At the same meeting he was elected its president and a member of the State Osteopathic Examining Board.

H. W. Avery, '91, as president of the Draft Horse Breeders Association, delivered an address at its recent meeting here. Mr. Avery is much interested in the educational work with boys now being undertaken by the Department of Farmers' Institutes and Agricultural Extension.

F. A. Kiene, '06, attended part of the meetings of Farmers' Institute Week and was in charge of the bright delegation of boys from Shawnee county, five of whom won prizes in the Boys' Corn Contest. Mr. Kiene is farming and is taking much interest not only in his private affairs, but in advancing the agriculture of his county.

L. W. Thompson, Osborne, Kan., junior in 1902, had a paper on "Alfalfa Curing" at the Osborne farmers' institute. He is interested in an alfalfa mill now under construction at that point and has made some important inventions in machinery for it. The mill has been constructed to a considerable extent in the machine shops operated by himself and his brother.

Bert W. Green, student in 1893, is practising medicine in Mexico, in the state of Pueblo, about one hundred miles from Vera Cruz, where he is one of the physicians for a mining company employing about 2500 men. He spent some of the holidays visiting relatives in town, and was up at the College long enough to note some of the changes that the years have brought.

The agricultural meetings during the holidays naturally attracted many graduates and old students, some of whom doubtless escaped recognition or observation. Among those not mentioned elsewhere were the following: Carl Thompson, '04; F. B. Morlan, '00; J. A. McKenzie, '01; W. R. Hildreth, '02; W. H. Steuart, '95; W. H. Phipps, '95; J. L. Pelham, '07; F. H. Meyer, '97; Dr. A. T. Kinsley, '99.

F. A. Waugh, '91, is Dean of the Summer Session of the Massachusetts Agricultural College. This summer school was first held last year and proved an unqualified success. This year additional courses are offered, including one especially for rural preachers. This seems to be an original effort. Dean Waugh is energetic in promoting publicity concerning this school and in making it helpful to those who attend, and to the state at large.

E. H. Webster, '96, chief of the Division of Dairying, United States Department of Agriculture, attended the meeting of the State Dairy Association and delivered an address on "Extension to Uncle Sam's Dairy Work."

F. E. Balmer, '05, is teaching the home school near Woodston, Rooks county. Since his graduation he had been farming, but shortness of crops relieving him from very much care on the farm this fall, he yielded to the urgent request of the school board to take the school. He has become much interested in the work and thinks it likely that he will teach for a few years. He is much interested in the prospect of consolidation of rural schools, and presented a paper on the subject at the Stockton farmers' institute, December 16. He made a brief visit to the College during the holidays.

Willis T. Pope, '98, who since 1902 has been head of the Science Department and through much of the time vice-president of the Honolulu Normal School, has been chosen temporary dean of the College of Agriculture and Mechanic Arts. It seems that the dean of the college died quite suddenly, and professor Pope will have little to guide him in planning the curriculum, arranging courses of study, organizing a faculty and opening the institution. It is hoped that instruction may begin February 1. The *Pacific Commercial Advertiser*, Honolulu, H. T., gives a sketch of his life and speaks in high terms of his work thus far in that territory.

Changes of address: E. C. Joss, '96, 402 Custom House, Portland, Ore.; J. W. Ijams, '90, Winnebago, Neb.; Frank A. Campbell, '90, box 278, Topeka, Kan.; L. B. Pickett, '05, R. F. D. No. 9, Tyler, Texas; Barton Thompson, '00, Waterloo, Kan.; Lucy H. Waters, Santa Monica, Cal.; T. L. Jones, '96, 731 Barnett, Kansas City, Kan.; J. E. Cooley, '07, 655 W. Adams street, Chicago, Ill.; D. M. Ladd, '01, 5484 Monroe Avenue, Chicago, Ill.; C. W. Fryhofer, '05, Ely's Lane, Rutherford, N. J.; J. A. Butterfield, '99, and Ary (Johnson) Butterfield, '98, 424 Wabash, Kansas City, Mo.; Emma E. Glossop, '83, 1123 Jule street, St. Joseph, Mo.; R. A. Cassel, '07, Highland, Kan.; W. T. Swingle, '90, Plant Life History Investigations, Department of Agriculture, Washington, D. C.

Professor TenEyck has recently received a very interesting letter from M. D. Snodgrass, '06, who is superintendent of the Kodiak Breeding Station in Alaska. He has about forty-five head of pure-bred Galloway cattle to look after, and has laid off an 8000-acre tract of land fifteen miles from Kodiak for a breeding station. He will use a gasoline launch in going from town to the ranch. Boats are the chief means of transportation there, though there are trails for horse-back riding. He has indulged in some hunting of big game, and killed a fine moose. He is also becoming infected with the mining fever. He and Mrs. Snodgrass (Margaret Minis, '01) seem to be very much pleased with the climate. In November the temperature ranged from 28° to 35° day and night.

*Board of Instruction (concluded).*

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WHEAT BREEDING.

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Historical Society

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No. 15

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# The Industrialist.

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| PROF. J. T. WILLARD..... | Alumni Editor   |

## TERMS AND VACATIONS.

### FALL TERM, 1907, THIRTEEN WEEKS.

Thursday and Friday, December 19, 20..... Examination at close of term

### WINTER TERM, 1908, TWELVE WEEKS.

Monday, January 6..... Examination for admission, at nine A. M.

Tuesday, January 7..... Winter term begins

Tuesday, January 7..... Short courses in agriculture and dairying begin

Saturday, February 1..... Annual intersociety oratorical contest

Saturday, February 15..... Mid-term examination

Thursday, March 19..... Annual concert

Thursday and Friday, March 26, 27..... Examination at close of term

### SPRING TERM, 1908, ELEVEN WEEKS.

Monday, March 30..... Examination for admission, at nine A. M.

Tuesday, March 31..... Spring term begins

Saturday, May 9..... Mid-term examination

Tuesday, May 19..... Beginning of summer course in domestic science

Tuesday and Wednesday, June 16, 17..... Examination at close of year

June 14 to 18..... Exercises of Commencement week

Thursday, June 18, at ten A. M..... Commencement

June 19 to September 16..... Summer vacation

### FALL TERM, 1908,

Wednesday, September 16..... Examination for admission, at nine A. M.

Thursday, September 17..... College year begins

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(Board of Instruction concluded on last page.)

# THE INDUSTRIALIST.

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No. 15

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## ***Wheat Breeding at the Kansas Experiment Station.***

Plant breeding is a sort of game with nature as it were, the rules of which are so intricate, and have been until recently so little understood, that it would be fair to say that in the past it has been largely a game of chance, with overwhelming odds in favor of nature. At the present time the rules of the game are better understood, and we shall continue to play it with better success.

Perhaps there are some who would be interested to hear in a simple and untechnical way just what modern wheat breeding is, as we practice it, what our methods are, what success we have had hitherto, and what hope we have for the future. For several years in the past we had been endeavoring to improve wheat by taking standard varieties as we found them, seeking to bring them up to a higher standard of excellence by selecting, from year to year, quantities of the best and most uniform appearing heads, so far as we could judge them, reserving these for seeding down improved plots. This is the method long pursued in Europe and in this country. We did not follow the system introduced by Professor Hays, of Minnesota, known as the centgener method, on account of the great expense involved, to meet which we had no adequate means. We depended almost entirely upon hybridization for the production of new forms, and a vast number of wheat hybrids were originated during these earlier years.

About four years ago more definite knowledge began to be gained concerning the behavior of plant hybrids, through the re-discovery of the so-called law of Mendel, by which we know, to put it simply, that the descendants of most plant hybrids split up in their progeny according to definite ratios, so that most of the characters sought to be combined by crossing, ultimately split permanently apart in one way or another, a fact we had already observed in wheat. Consequently, hybridization is not always successful as a mode of originating new, fixed kinds of wheat plants, and we were obliged to seek other means. About three years ago, the writer decided to put the wheat breeding of the

Botanical Department upon an entirely new basis. It had been learned that a great many kinds of plants and animals are constantly throwing off new forms, which the gardeners call sports. It used to be supposed that these were very rare and that they might at any time revert, or go back to the types from which they had sprung. Sports were therefore supposed to be of little use in plant breeding, except where they could be propagated by buds, cuttings, and the like. Perhaps the most striking case of a sport thus propagated is the navel orange. But we owe it to Professor DeVries, of Holland, that we now know that very many annual plants are producing these sports, and, what is more important, that the new forms thus springing into existence, no one knows why, remain forever in their new form in all their pure-bred descendants. This manner in which new species suddenly spring into existence full-fledged from already existing species, DeVries calls mutation, and it is one of the greatest discoveries that has ever been made, so far as plant breeding is concerned. The question for us here at once becomes: is wheat, too, throwing off new sorts of wheat plants by mutation? Who knows, out of the fields of waving wheat, how many new kinds, better than their fellows, have thus sprung forth upon the earth, only to be lost in the mass of the mediocre plants which compose the majority of most of the so-called varieties as we grow them.

Three years ago, therefore, we decided to start out upon a new search; not as before, for the best "variety," since the wheat varieties were found to consist of all sorts and conditions of plants, of various ancestry, differing habits, varying and uncertain in their value. For a variety is never constant; it changes from year to year as its membership changes, some individuals reproducing weakly or dying out, until, after a few years, there may be nothing at all left of the original lot of plants from which the variety first got its name. For example, in the human world we still call the people who live in the city of Rome, Romans; and the people who live in the city of Athens, Greeks; but they are not the same people in point of lineage who called themselves Romans and Greeks in those same cities in the times of Cicero and of Pericles. With wheat, in a word, we set out upon a search, not for the best variety, but for the best *wheat plant* in the world, a mutation or sport of supreme excellence; and we began by going into the plots, where we had growing side by side hundreds of so-called varieties of wheat, coming from all over Europe, the Cape of Good Hope and Australia, and from the entire North American continent, wherever wheat is grown. This was our field for selection—some

600 variety plots containing almost every type of wheat grown by man. Surely, somewhere among these manifold forms, so different from one another in all of their numerous characters, there must be some very much better than others. The only problem was how to find them. The way appeared to be through the selection of a great many individual plants, to be grown separately for comparison. This sounds simple enough, but it is not easy in practice, as we shall see. To make a beginning, from all of these 600 plots we proceeded to search for those wheat plants which, so far as we could judge, appeared to be the very best. Here at once we met with an obstacle, in the fact that it is almost a practical impossibility to tell, out of the tangle of roots and stems in a drill-row of wheat, where one wheat plant ends and another begins. We were therefore forced to confine ourselves to the selection of single heads. Proceeding in this way, we selected during the first season 536 heads in all, each of which received a label bearing the serial number given to the plant. These, when ripe, were brought into the laboratory and placed in the hands of an organized force of operators, who recorded for each head in succession, on blanks especially prepared for the purpose, every character in the head or grain of wheat that by human eyes or hands could either be described or measured in units. In all, there were fifty such points to be accounted for. We recorded, for instance, not merely the fact that the head was bearded or beardless, but the length of the beards; not merely the length of the head, but the number of spikelets (meshes) it bore; not merely the number of spikelets, but also the number of flowers produced in each spikelet and whether they all produced grains, and, if not, how many were seed bearing and how many were sterile. We recorded not only the number of grains produced, but we measured all of the grains in two directions and took all of these grains and weighed them in addition.

We then proceeded to plant each of these pedigree heads, for which the records had been made, in rows, each plant to itself, and with the grains planted equidistant in the row. Last July all of the descendants of these pedigree plots were harvested as before. This time it was possible not only to keep each family distinct, but it was possible to distinguish each separate plant in the family, on account of their having been planted equidistant as stated. We now had an enormous mass of material to be worked over. The laboratory force was this year largely increased, and our experiment station laboratory through the summer, with its corps of twenty-five workers, presented much the appearance of a work

room in a factory. A plant of wheat would be handed to the first operator, the serial and plant number entered on the blank, the number of stalks counted, and the length of each stalk and of each head carefully measured. Another took the plant, counted the number of the spikelets on each head, and recorded all the descriptive characters—the color and shape of the glumes, whether they bore awns (beards) or not, and if so their length. Another opened the spikelets in turn, beginning at the base of the head, and recorded the number of the seed-bearing and of the sterile flowers, and removed the grains. Another took the grains thus removed from each head and measured them in their length and breadth; another weighed them, and so on. Each operator did one thing all of the time exactly as in a factory, and the force gradually developed into a rapid, expert, specialized group of workers. We found, when the work for the season was done, that from our 536 pedigree head selections of the preceding year (now magnified by natural increase to some 5000 plants with 40,000 heads) we had surviving, in all, 482 families of pedigree plants, for which we had complete records of all their characters for two generations. Out into the field again went all of the pedigreed families, and this time, on account of the enormous increase in the number of the plants and heads to be studied, we had to lay our plans for the carrying on of the pedigree records in their entirety with a restricted group of families, which will suffice for the scientific purposes for which the records are made—the study of heredity and variation in the plants. In the remainder of the pedigreed stock the records will have to be restricted chiefly to the grain characters. Our fields this fall are practically all planted with these pure-bred races of wheat in their third season. Each year, by selection of promising heads from our general stock in the mass variety plots, we continue to lay the foundation for new pedigreed races of superior plants.

The writer believes that this is the first time that an attempt has ever been made, in an American experiment station, to make a comprehensive study of all of the visible characters of the wheat plant in pure-bred races grown through several generations. In the most extensive experiment of this kind hitherto, that of Prof. W. M. Hays, of Minnesota, an attempt was made to find a superior wheat out of thousands by what may be called the sifting method, by which, out of thousands of plants growing in nursery plots, a few were selected for some special character or characters, such as the number of stalks to the plant, the relative evenness in height of the stalks, etc.; and the grain from the selected plants,

after being ground separately, was tested for the rising and baking qualities of the flour. By this method, if enough plants are used, discoveries of value may be made. But the method is strictly dependent upon the law of chance, and moreover there is nothing to prove whether the characters selected for are stable and permanent ones, or whether they will vary indefinitely from year to year in the offspring.

The first thing, therefore, to undertake, as lying at the basis of the breeding of the wheat plant, and upon which all success depends, lies, in the writer's judgment, in the discovery of the extent to which wheat plants may vary from generation to generation of pure-bred races in respect to all of the principal organs and characters which the plant possesses, *and in the discovery of superior mutations or sports*. To select, for instance, out of numerous wheat heads the one bearing the highest number of grains, *may* result in a race of high-yielding wheat, but the chances are all against it. The probabilities are that we may have here just an individual variation, the descendants of which will fall back into the lower average. The first thing necessary therefore in breeding for yield, let us say, is to find out by countings made upon very many plants through several generations of pure-bred stock just what is the *outside* limit of production in the given race of wheat, and what is the *average* or *mean*. Knowing this, we shall be able to judge, when we find a wheat plant producing very many more berries than its fellows, whether its progeny are likely to make a family, the *mean* or *average* of which in seed production will be above the mean or average of any or all of the others. If, for instance, a wheat plant should be found bearing ten heads with forty grains each it would be called a most extraordinary plant; but, before we could say how much better it really was than its fellows, we should have to see whether the mean of its offspring, bred pure through several generations, would bear ten heads with forty grains each or not. Many such an apparently superior plant produces offspring which fall back into mediocrity. Hitherto, as was stated, wheat breeders have taken into account only a few of the characters of the plants. Ours appears to be the first thoroughgoing, systematic attempt to cover a wide range of characters. In doing this there is a very important principle involved, to which reference has not yet been made, and that is the principle of *correlation*. No plant or animal produces an organ which is not directly or indirectly dependent upon the other organs of the body. Not only this, but it is found that certain characters are bound together—correlated—more closely than others, so that if

one of the pair varies the other will vary with it in a constant ratio. The degree of closeness of correlation of the members of any pair of characters is embodied in a mathematical expression called the correlation coefficient. This coefficient will vary from 0, where there is no correlation at all, to 100, where the correlation is perfect. Suppose we find, for instance, that the correlation coefficient between such characters as the number of stalks per plant and the average number of grains per head to be only 23. This would mean that there was very little relation between these characters. If, on the other hand, we found the correlation coefficient to be 68, it would mean that we could select plants having the largest number of stalks, in confidence that we would also be obtaining, in large degree, plants with many grains in each head—in other words, high yielders; and, since counting the stalks would be easier than counting the grains, we would have a shorter cut to the same result.

Now nothing whatever is known in a definite, scientific way, regarding the correlation of characters in wheat, and it is to the working out of just such problems as these that we are now able to devote ourselves by means of the invaluable records we have been accumulating for the past two years. The necessity for a thorough botanical study of wheat becomes very plain when we examine the work of the plant breeders in other lines. Every plant breeder, whether working with grapes or cantelopes, roses, carnations, or strawberries, finds that he has to study the plant as a whole in all of its characters, and it has been found that by this principle of correlation there are sometimes bound together the tiniest and most unlooked for visible earmarks, of absolutely no significance in themselves, with other extremely important characters; such as size and flavor in the fruit, productivity, immunity from disease, etc. In addition to the study of all the visible characters in the wheat plant which have been referred to as making up our records for nearly 500 families for two years, we have carried on a parallel line of experimentation, in which we are going a great deal more thoroughly into the characters of the grain. Probably most of our readers know that wheat is either hard or soft; and either red or white in color. This, however, expresses in the very roughest and simplest way the vast range of differences in wheat grains of different races and varieties and in varieties from the same source grown in different places. There is, for instance, a range in hardness which will admit of a dozen different classes; and of color which will be nearly as comprehensive. There exist, also, within varieties of the same range as to

hardness or color, wide differences in the form and size of the kernel, so pronounced as to strike even the most unpracticed eye at first glance. To measure these differences in form, color and hardness, to get at the size of the kernel by determining its volume, and to bring in another important factor, that of specific gravity, became the next object to which we directed our efforts. We took 100 kernels each, of 16 distinct classes of grains, differing from one another in the most pronounced manner, in respect to size, form, color and hardness, weight and specific gravity, and subjected each of these 1600 kernels to the most exhaustive study in these particulars. Every kernel was carefully measured in two directions upon a micrometer scale with a lens; every kernel was weighed and its volume determined by the amount of alcohol it displaced in a graduated burette, and so on through the entire series of the category of the characters studied. All of these 1600 grains were planted each to itself. To each was given a separate number and a label, and we soon had growing in what we called our series of pedigree grains a group of plants coming from all quarters of the globe and representing all of the principal types of the wheat kernel as found among the wheat races commonly grown. This winter the plants are being first subjected to exactly the same kind of laboratory study of the heads as all of the others previously described. But over and above this, and in addition, the grains will receive the same minute and exhaustive series of measurements as for those originally planted and from which they have sprung, from which we shall learn exactly what changes, if any, have taken place in each and all of these types of wheat kernel.

What is all of this laborious, tedious and expensive investigation for? What shall we learn after it is done, that is worth knowing, or that is of practical value? We shall learn at least three things with regard to wheat that are of most supreme importance to agriculture. By finding out the exact changes that may occur in the pure-bred progeny of each of these carefully investigated grains, we shall be able to say:

First.—Whether wheat “runs out,” *i. e.*, degenerates in any of its characters, as the saying is, so that new importations of seed wheat from other sources will have to be made every few years.

Second.—We shall find out what is the cause of the yellow berry in hard wheat, and whether races of hard wheat can be found that are free from yellow berry; and as a sort of correlary.

Third.—We shall discover, in general, whether and under what

conditions hard wheat becomes softer or soft wheat becomes harder.

Finally, and most important of all, we are discovering the superior strains of wheat plants by means of our pedigree records, and are now able to separate them from the inferior strains, which go to make up the mass of a race or variety in most cases.

In the wheat grains, color, form, size and hardness, specific gravity and chemical composition (which means flour value) are all characters which are so closely bound up together, that, in the study of any one of them, all of the others must be taken into consideration. For instance, the deep amber red color of the best Kansas winter wheat is associated with a grain of great hardness, rather small size, long and narrow rather than plump and rounded, heavy, high in specific gravity, and rich in protein content. Now, that there is a high degree of correlation among these characters is evident from observation alone. Although just what that degree is scientific measurements alone will reveal. But here is a point of practical interest which may be suggested—if we can find that there is a high degree of correlation between color and protein content, then we shall have such an immediate clue to the closely correlated protein content as will enable us to select high protein races by the much cheaper and more rapid method of color determination, rather than through chemical analyses. To aid us in this intricate and difficult work with the grain, we have had to invent, or adapt to our use, much special equipment. We determine the hardness of a pure variety of wheat by crushing 500 kernels dried for five days at 100° C. in a special piece of apparatus that was made to order for this department by one of the best forms of instrument makers in the United States. The determination of the color factor in the grain in an exact way has given more trouble, but a very promising solution of it is under experiment with a very interesting piece of apparatus, devised by the writer, as a modification of an instrument known as the tintometer. More details with regard to these two and other special forms of apparatus will be given with drawings at some future date. What we are hoping to accomplish in this exact work upon the hardness and color of the wheat grain has an important and practical outcome aside from our wheat breeding work proper—namely, the standardization of grain grading. It is the hope of the writer that within a few years we shall be able to offer to the millers a scientific method of grain grading, as to color and hardness, that will be both rapid and practical, and that will put the grading of wheat upon an ex-

act basis, similar to what has been accomplished for milk by the Babcock test.

To conclude, we have, in some 40,000 closely printed forms filling nearly fifty thick volumes, the records of fifty plant characters (nearly half of which are expressed in units of measurement) for almost 500 pure-bred races of wheat coming from some 600 different commercial varieties from all over the world, and which are now growing in the field in their third generation. Even at this stage we have begun to compare their relative productivity by planting each row alternately with a row of standard hard red Kharkof wheat which has given superior results at this Station for several years. In this test the same number of seeds per row were planted, so that the comparison will be nearly as exact as a field test can be made on a small scale. Next season we shall have bushel lots of seed of all of the pure-bred races, and those that rank highest in the preliminary test are going into the field for yield tests in tenth-acre plots. The milling, rising and baking tests of the flour will finish the work.

We have, therefore, by every resource at the command of science, not only marshalled all of these plants into definite order, have made them tell the story of their family histories, so that we can distinguish the superior from the inferior stock, the mutations from the variations that are unstable, but we are also making the grains of wheat tell us whether the farmers must go abroad for their seed wheat; whether the Kansas red winter wheat "runs out;" whether the yellow berry in the grains is a characteristic that can be gotten rid of or not, and whether grain can be graded in an exact and scientific manner, that will be practical and useful both to the miller and the farmer. In this article only the bare outlines of the work have been given; but the writer believes that it is not boasting to say that it constitutes, as a whole, the most thoroughgoing, far-reaching and comprehensive series of investigations upon wheat that has ever been made at any experiment station in the United States; and that the outcome of these scientific researches under the Adams fund will be of the utmost practical value to the farming community by the production of a large number of superior, pure-bred races of wheat, and by the solution of some vexed problems in wheat culture.

H. F. ROBERTS.

The Department of Agronomy has installed a new centrifugal machine for making mechanical analyses of soil. The machine is driven by an electric motor and makes 1200 revolutions per minute.

***"Hog Day," February 8.***

"Alfalfa Day" did not seem so peculiar, nor "Corn Day," but "Hog Day!" Why not have a day for the brightest farmers in Kansas, and that means the brightest farmers in the world, to meet and discuss ways and means of handling the great Kansas "mortgage lifter?" Alfalfa, corn, and hogs!—the great triumvirate that means not only more money but better soil, better buildings, better homes, and better schools with the added wealth. And so the Farmers' Institute Department of the K. S. A. C. has suggested to the various county and local institutes of the State the holding of two-hour conferences on February 8, 1:30 to 3:30 P. M., on the various hog problems—care of the brood sow, yards, sheds, first feeding of young pigs, later feeding, weaning, pasture, summer and fall feeding, when to market, feeding rations, etc. These are not just "big town" meetings, but the superintendent urges that each county in Kansas call as many meetings on that day as there are trading points where a dozen farmers are likely to come at that time. These meetings should not be formal, but largely experience meetings, as out of the experiences of the many the best methods may be evolved.

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***Agricultural Education Pamphlets.***

Two years ago the Board of Regents authorized that some work be done looking to the general introduction of elementary agriculture in the public schools of Kansas and assigned the work to the Farmers' Institute and Extension Department. Since that time the superintendent of that department has made about one hundred addresses on the subject before teachers' institutes and associations and public gatherings, has personally corresponded with hundreds of principals of high schools and city and county superintendents, and has written several syndicate articles for the newspapers of the State.

Last June the Regents of the Kansas State Agricultural College authorized this department to publish a series of pamphlets on elementary agriculture, including the following titles: The Soil, How Plants Feed and Grow, Hygienic Cookery, Insects, Birds, Live Stock on the Farm, and to send these free to all the rural teachers of the State, the names to be secured from the county superintendents of schools. Only two county superintendents have declined to send names, and hence all the rural teachers of Kansas except those of two counties are now receiving these pamphlets as printed. Extra copies have been sent on request for class use.

Now hundreds of copies are going out to town and city high schools where agriculture is being introduced in this way. These pamphlets are also offered free to all granges, farmers' clubs, or other organization where any course of study is pursued. Any or all numbers will be sent to any person interested in these subjects. Address, Superintendent of Extension Department, Manhattan, Kan.

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### ***Boys' Corn Contest, 1908.***

The Extension Department of the Kansas State Agricultural College is now sending out to all farmers' institute organizations the recommendations for this year's work with the boys. For two years about five thousand Kansas farmer boys have been engaged in this corn-growing contest, and wherever inaugurated it has created great interest, not only in corn, but it has really caused an educational and intellectual awakening. Fathers, teachers and county superintendents unite in saying that it has had a wonderful effect upon the individuals in the contest and on whole schools and communities.

The changes now made in the plans, it is hoped, will greatly increase the membership. Then the big State judging school at Manhattan December 26 to January 4, at which 350 boys were enrolled, will also add to the interest and add to the membership. In most counties in eastern Kansas the membership could easily be trebled or quadrupled, and about fifteen counties in eastern Kansas were not in the contest at all last year.

*Class B.*—Open to boys from ten to fourteen years of age, each boy to be given one quart of good seed-corn by the county committee and to exhibit ten ears at the county institute next fall, and winners to receive cash or merchandise prizes.

*Class A.*—Open to boys from fourteen to twenty years of age, each boy to plant ten ears of good seed-corn (of his own raising or from elsewhere), to exhibit ten ears next fall at the county institute; and it is recommended that these winners be given as prizes free trips to the State Institute, December 28, 1908, to January 2, 1909.

Further information will be sent out about the first of February. All correspondence relative to these contests should be addressed to J. H. Miller, superintendent Institute and Extension Department, Manhattan, Kan.

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The Entomology Department has lately added a high-grade Bausch & Lomb (Rochester, N. Y.) projectional lantern to its equipment.

**Local Notes.**

The Ex-Ionians met with Mrs. A. A. Potter, Monday night.

Custodian Lewis has twenty-eight student assistants this term.

Professor Freeman and wife are the happy parents of a new baby girl.

Lieut. C. H. Boice reports nearly five hundred students enrolled in the College battalion this term.

W. E. Critchlow, the traveling secretary of the Intercollegiate Prohibition League, addressed the students last Tuesday.

Contractor Eversole, junior, of the Y. M. C. A. Hall, says that he can complete the building early in February, if the weather will let him do it.

Carl S. Knight, the new assistant in agronomy, is a graduate of Wisconsin University and Agricultural College, class of 1907. He arrived last week and has taken hold of his work like one who knows how to do it.

Prof. C. M. Brink and wife celebrated the twenty-fifth anniversary of their marriage on January 10 by entertaining a number of their friends. The INDUSTRIALIST congratulates and wishes the happy pair another quarter of a century of wedded bliss.

The additional electric street lamps that were ordered by the city council a month ago have not been installed as yet. The light company says that it can not get the necessary poles from Minneapolis, Minn., where they were ordered. There is to be a lamp at Bluemont and Eighth and one at Vattier and Tenth.

A count of assignment stubs made on January 14, one week from the opening day of the term, gave the following results:

|                                    | 1907-'08. |        | 1906-'07. |        |
|------------------------------------|-----------|--------|-----------|--------|
|                                    | Men.      | Women. | Men.      | Women. |
| Graduates.....                     | 6         | 11     | 4         | 4      |
| Seniors.....                       | 63        | 48     | 87        | 40     |
| Juniors.....                       | 121       | 48     | 94        | 44     |
| Sophomores.....                    | 238       | 114    | 157       | 62     |
| Freshmen.....                      | 277       | 111    | 259       | 105    |
| Sub-Freshmen.....                  | 293       | 135    | 298       | 89     |
| Preparatory.....                   | 67        | 24     | 100       | 26     |
| Specials.....                      | 5         | 4      | 17        | 20     |
| Domestic Science Short Course..... | —         | 95     | —         | 68     |
| Farmers' Short Course II.....      | 38        | —      | 37        | —      |
| Farmers' Short Course I.....       | 136       | —      | 137       | —      |
| Farm Dairy.....                    | 25        | —      | 25        | —      |
| Totals.....                        | 1269      | 590    | 1215      | 458    |
| Grand totals.....                  | 1859      |        | 1673      |        |

This gives a grand total of 1859 students present at the close of the first week. We have no doubt that by the time the INDUSTRIALIST reaches its readers the enrolment will exceed the 1900 mark, and we are certain now that the next catalogue will be able to enumerate from 2000 to 2200 names for the year.

The following students have been chosen by their respective societies to represent them in the intersociety oratorical contest which takes place in the College Auditorium February 1; Sol. W. Cunningham, Webster; Clara Schild, Franklin; Lee Clark, Alpha Beta; Grace Hawkins, Ionian; Hallie Smith, Eurodelphian; C. S. Stevens, Athenian. The Hamilton society will elect its speaker this week. The judges have not been appointed yet.

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***Chapel Exercises for Saturday, January 25.***

Hymn No. 23.

Oh, What is Man.....Nessler  
E. E. BEIGHLE.

Reading.

Hark, Hark My Soul.....Shelley  
CHAPEL CHORUS.

Announcements.

March .....  
ORCHESTRA.

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***Alumni and Former Students.***

Changes of address: P. H. Ross, '02, Marquette, Kan.; A. D. Holloway, '07, Omaha, Neb., in care of Y. M. C. A.; Effie (Gilstrap) Frazier, '92, Chandler, Okla.; Hattie (Paddleford) McFadden, '97, R. F. D. No. 3, Waverly, Kan.; W. R. Correll, '99, 1030 Laramie street, Manhattan, Kan.; J. A. Oesterhaus, '01, Ft. Riley, Kan.; W. O. Peterson, '97, Gove, Kan.; Christine (Hofer) Johnson, '02, 69 Court street, Newark, N. J.

Mr. and Mrs. Walter T. Swingle, of Washington, D. C., came in Wednesday for a brief visit with Mr. Swingle's father, J. F. Swingle. They were on their way to California, where they go for the benefit of Mrs. Swingle's health. Mr. Swingle graduated from the K. S. A. C. in 1890 and now has a responsible position with the United States Department of Agriculture.—*Nationalist*.

C. P. Hartley, '92, physiologist in charge of corn investigations in the bureau of Plant Industry, Department of Agriculture, is the author of Farmers Bulletin No. 313, on "Harvesting and Storing Corn." This is a valuable and thoroughly practical pamphlet concerning the care of the corn crop, both ears and stalks. The excellent illustrations made from photographs add materially to its value.

R. A. Oakley, '03, assistant agrostologist, forage crop investigations, has collected in Bulletin No. 111, Part V, of the Bureau of Plant Industry, the observations that he has been making for a number of years upon the adaptability of brome-grass, its manner of growth, methods of culture, uses, and value. It is probably the most valuable publication on the subject. The title is "The Culture and Uses of Brome-Grass."

*Board of Instruction (concluded).*

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TERMS AND VACATIONS.

FALL TERM, 1907, THIRTEEN WEEKS.

Thursday and Friday, December 19, 20..... Examination at close of term

WINTER TERM, 1908, TWELVE WEEKS.

Monday, January 6..... Examination for admission, at nine A. M.
 Tuesday, January 7..... Winter term begins
 Tuesday, January 7..... Short courses in agriculture and dairying begin
 Saturday, February 1..... Annual intersociety oratorical contest
 Saturday, February 15..... Mid-term examination
 Thursday, March 19..... Annual concert
 Thursday and Friday, March 26, 27..... Examination at close of term

SPRING TERM, 1908, ELEVEN WEEKS.

Monday, March 30..... Examination for admission, at nine A. M.
 Tuesday, March 31..... Spring term begins
 Saturday, May 9..... Mid-term examination
 Tuesday, May 19..... Beginning of summer course in domestic science
 Tuesday and Wednesday, June 16, 17..... Examination at close of year
 June 14 to 18..... Exercises of Commencement week
 Thursday, June 18, at ten A. M..... Commencement
 June 19 to September 16..... Summer vacation

FALL TERM, 1908,

Wednesday, September 16..... Examination for admission, at nine A. M.
 Thursday, September 17..... College year begins

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MISS MARGUERITE E. BARBOUR (Sargent Nor. Sch. Phys. Tr.).....	Director of Physical Training
MISS ANTONETTA BECKER (Drexel).....	Superintendent of Domestic Art
MISS ANNE M. BOYD, A. B., Lib. Sci. (Millikin).....	Librarian
ROBERT J. BARNETT, B. S. (K. S. A. C.).....	Principal Preparatory Department

(Board of Instruction concluded on last page.)

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No. 16

*Boys' Corn Contest.**

To J. H. Miller, superintendent of farmers' institutes, belongs the credit of organizing and successfully carrying out the boys' corn contest work in this State. He is largely accountable for this splendid gathering of boys and young men from all over Kansas who, as a reward for their faithful work in growing and exhibiting corn, have been sent to the Agricultural College, without expense to themselves, by the generous premium donors of their respective counties, in order that they may take the ten-days' course in stock judging and grain judging and learn more about these subjects. We should not fail, however, to give much credit for the great progress of this movement to the local promoters—the county superintendents of public schools, institute officers, business men, and farmers who by their untiring energy and generous aid and coöperation have made both the local and the State meetings a remarkable success.

The boys' corn contests were started in 1906. Contests were held in forty-seven counties in the fall of that year. The first annual meeting was held at the Kansas State Agricultural College, December 30 and 31, 1906. Only twelve boys attended this meeting, and eighty-four samples of corn were entered for competition in the State show.

In 1907 contests were held in fifty-five counties of the State. Nearly four hundred boys are now enrolled for the short-course work, and nearly two hundred samples of corn are on exhibition—the largest and finest display of good corn ever seen in this State.

This movement for better corn has made a remarkable and rapid growth. Interesting boys in corn has resulted also in interesting their fathers as well, with the result that the farmers all over the State are studying corn as never before and are taking more care in selecting seed and in planting and cultivating the corn; and this is resulting in larger yields of corn of better quality wherever improved seed is used and the better methods of culture

*Address by Prof. A. M. TenEyck before the Boys' Contest Association meeting held at the Kansas State Agricultural College, December 31, '07.

are practiced. The distribution of well-bred seed-corn to the boys has given a wide distribution to varieties and breeds of corn that are superior to the average corn of the State which the farmers have been planting and growing, and this fact will eventually cause great improvement in the quality and grade of corn as well as an increase in the average yield of the corn crop of the State.

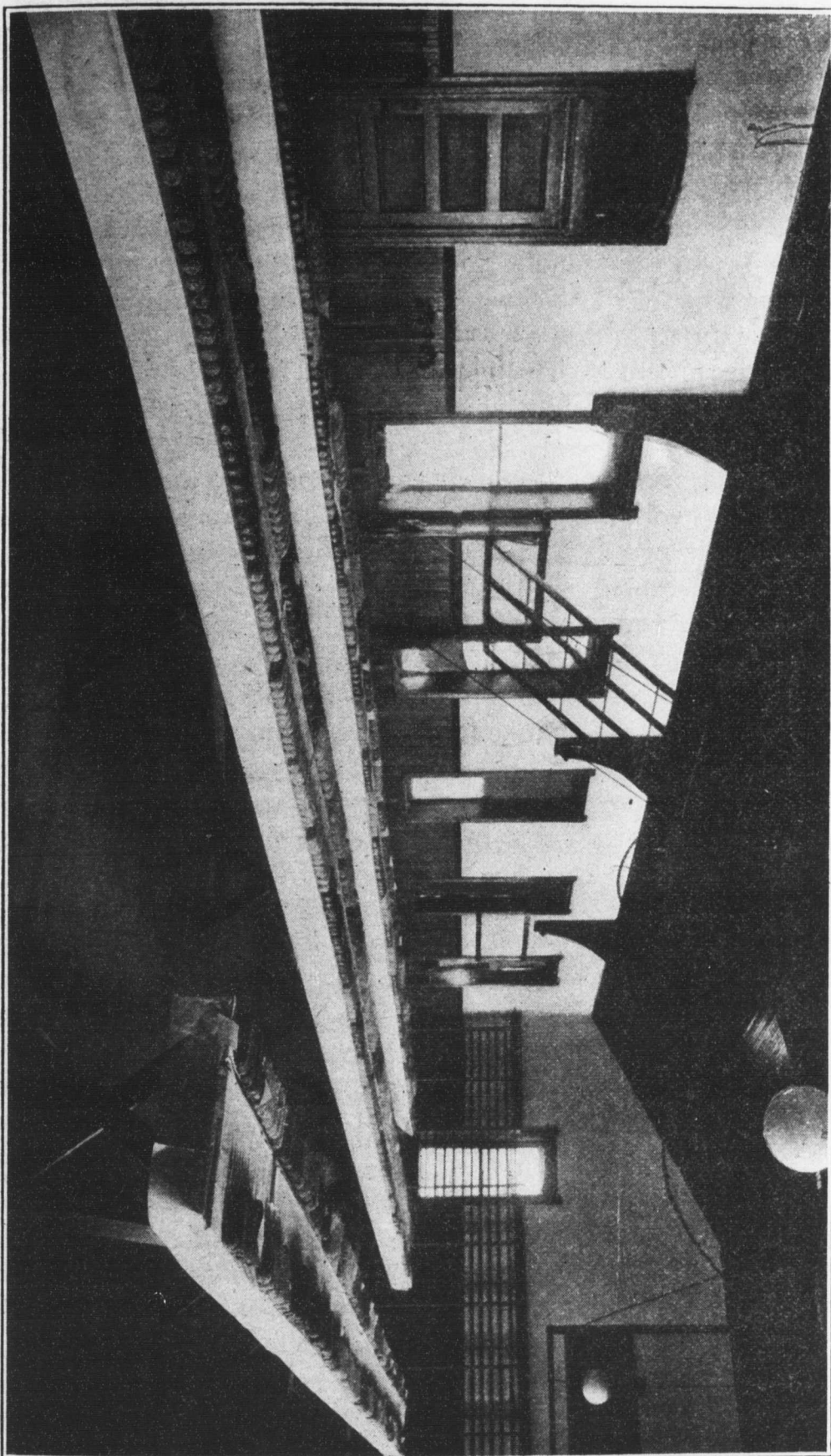
The present movement for corn improvement really began in the spring of 1903, when the Agronomy Department published Press Bulletin No. 120, "Better Bred Corn For Kansas," in which the farmers who had good corn were requested to send samples of the same to this department for planting in a comparative trial of varieties for the purpose of securing the promising varieties to be used as foundation stock for breeding and improvement. Seed of the purest bred and best-producing varieties recommended in other states was also secured and planted in this comparative trial. Several excellent varieties of "native" Kansas corn were thus discovered; a few of the improved varieties proved to be good producers, and several of the best-producing varieties have been still further improved by breeding, either at this Station or by farmers, and hundreds of bushels of well-bred seed-corn have already been distributed throughout the State by the Agronomy Department of this College and Experiment Station, and by farmers who have become interested in corn breeding.

There is little question but that the planting of this well-bred corn, together with the teaching of the Agricultural College on this subject to its students, and through farmers' institutes and boys' corn contests, Experiment Station bulletins, and the agricultural press, assisted also by progressive farmers and the Kansas Corn Breeders Association, have already had a marked effect in increasing the yield and improving the quality of the corn crop of the State. In a year which was not especially favorable to the production of corn, and when partial crop failures were reported in localities all over the State, Sec. F. D. Coburn, of the State board of Agriculture, reported the average yield of corn in the State in 1906 as 28.5 bushels per acre, or seven bushels above the average yield for the last ten years. In 1907 the average yield of corn in the State, as reported by Secretary Coburn, was only 21.33 bushels per acre. The very unfavorable season and the almost total failure of the corn crop in western and parts of central and southern Kansas account for this low yield. And yet in this unfavorable corn year magnificent yields are reported by a number of our corn breeders, ranging as high as 114 bushels per acre, and at some of the corn contests which I attended in southern Kansas,

where the crop was usually badly injured, some boys reported yields of 80 bushels per acre. So we may rightfully conclude that, in this unfavorable season, "corn breeding" has had much effect in maintaining the average yield of the corn crop of the State.

In 1906 I personally judged the corn and made talks on corn at boys' contest institutes in thirty-seven counties of the State, and representatives of the Agronomy Department attended several contests in other counties. Hundreds of talks on corn have been made throughout the State during the last three years on the corn trains and at various farmers' institutes. The Agronomy Department has published two important bulletins on corn judging and corn breeding and culture, which have been widely circulated and read, and are really the authority on this subject in the State. Much work has been done and some progress has been made, but we are really only just beginning to improve corn. The last five years have seen some improvement in corn; the next five years will see still greater improvement. When we consider the fact that individual ears of corn of one variety, the best seed ears which a good judge is able to select, will, when planted in separate rows under exactly similar conditions, give variations in yield and quality of grain produced in a single season of more than one hundred per cent, we begin to realize some of the possibilities in corn breeding and the opportunities afforded to improve our present stock and secure much greater yields of corn of better quality than we are at present producing.

This important work will not stop with corn. The principles of breeding and selection which apply to corn apply equally, also, to other crops—wheat, oats, barley, Kafir-corn, sorghum, grasses, alfalfa; and as great or even greater improvement may be made in many of these crops as is being accomplished with corn. In a "head-row" test of Kharkof wheat conducted by the Agronomy Department last season, when thirty grains from each of twenty-four selected heads were planted in separate rows, we found variations in yield from different heads of more than one hundred per cent, and a difference in grade of grain produced from the several rows which ranged from almost soft and rejected to No. 1, hard, red winter wheat. This Experiment Station is carrying on breeding work with nearly all the crops named above, and we find with each that the possibility of improvement is as great as already published for corn in bulletin 147. And the boys' contest work need not stop with corn. I believe that Mr. Miller intends next year to include wheat, and possibly Kafir-corn and Milo Maize.



Boys' State Corn Contest.

You boys are to be congratulated on being here, and that you have these splendid educational advantages afforded by the Agricultural College, and on being able to take part in these contests throughout the State, which shall be the means of great improvement in Kansas agriculture. You have greater opportunities to secure an agricultural education than your fathers had, and you need to have more education in agriculture than your fathers had in order to succeed as well. Thirty, forty or fifty years ago your fathers broke this fertile Kansas prairie, and for all this long period on most of these farms the land has been cropped almost continuously to wheat and corn until the soil is becoming exhausted in fertility. The cream of our fertile prairie land has been taken away and shipped out of the State in train-loads of corn and wheat.

The young farmer of the near future must be more skilled and better educated than the older farmer of the recent past, if he wishes to succeed as well as his father succeeded. The time is past when the uneducated and unskilled man can become a successful farmer and a man among men. It is not so easy to make a good living at farming to-day as it was forty years ago, or even twenty years ago. The soil is less fertile and competition is greater. There are many educated, hustling men engaged in the various lines of farming to-day, and if one wants to compete successfully with them he must be educated also. He must understand the soil and the great principles of cultivation, aeration and soil moisture conservation; he must know the science of plant growth and propagation; must know the chemistry of the plant and of the animal; must learn the principles of animal nutrition and balanced rations in stock feeding; must study the animal and be practiced in stock judging and crop judging in order to select good breeding stock; and he must know a thousand other things about agriculture, which he may not now know, if he hopes to successfully compete with those who have knowledge and training in these things.

Boys, this little instruction which you are receiving here in these few days is only a beginning—a start in the right direction. I wish that all of you might return to take a longer course in this great College. I hope that many of you will come back, and I hope that you who may be able to take a college course of instruction here or elsewhere may continue the good work which you have begun and study agriculture by observation in your work on the farm, by attending farmers' institutes and reading agricultural papers and books and Experiment Station bulletins, so that

you will not fall behind in this great forward movement for higher education in agriculture.

Every young farmer in the State should take the agricultural course in this or some other good agricultural college. It does not matter so much how long a man lives, as how he lives, and one can live so much more and accomplish so much more after spending four years in college that the time is never missed. Every young man can find means to carry himself through college. "Where there is a will there is a way."

Plan for Joint Use of Grounds by State Fair and Agricultural College.

Col. W. A. Harris has started an idea which may yet give Kansas a state fair—after every other scheme has failed. Senator Harris attended the breeders' meetings at Manhattan last week, and in the course of a speech Friday night made the suggestion upon which hundreds of the best friends the State has—friends of its Agricultural College—are now working. No plan yet offered has met with such favor, and the wonder is that it had not suggested itself before. Here is the form in which it first came out:

"I was looking over the grounds of the Minnesota Agricultural College," said Colonel Harris, "and was discussing with the dean of the school the necessity for more buildings for the animal husbandry department. Just across a high-board fence from where we stood were the buildings of the Minnesota state fair. They stood idle 50 weeks of the year, and the thought occurred to me—'why not tear down that board fence.' I so expressed it, and was glad to find I had said something. The Minnesota college authorities investigated and found that some of the fair buildings were well adapted to their needs, and I have no doubt the college will soon be getting the use of them.

"In Wisconsin they are already doing this and saving a big sum of money to the state by making the buildings do double duty. Why can you not do the same thing here? Your magnificent equipment of College buildings here is still not adequate. The Animal Husbandry and Agronomy Departments, I understand, are in urgent need of more room—and the whole State needs a State fair. Everybody but the politicians admit the need, regardless of location, but, I say, why not locate the State fair here, side by side with your State College, and save the State money on both institutions by getting the fullest possible use out of the buildings."

It is doubtful if even Senator Harris realized how close the State fair project lies to the hearts of Kansans who know the importance of their State's prosperity in animal husbandry. He never made a speech that commanded closer attention, and concerted enthusiastic action never followed more closely upon his words. Director Burkett, of the Kansas Experiment Station, had just completed an estimate of what is needed by the Department of Animal Husbandry alone, and has the figures to show that an appropriation is needed which would make a good big beginning on the equipment for a State fair ground. President Nichols, of the College, believes that the plan to get the suggested double service out of permanent buildings is entirely feasible, and he is heartily in favor of working it out.

The city of Manhattan is, of course, vitally interested. The day following Colonel Harris' speech members of the Commercial Club conferred unofficially with the College officers and looked over the ground. Land enough can be gotten adjoining the College grounds, and the site is ideal for a fair ground. As the bigness of the opportunity revealed itself the business men warmed to the work in earnest, and at a meeting this week gave their committee authority to do whatever it found best and necessary toward the desired end. Judge A. M. Story, president of the Agricultural College Board of Regents, and a breeder of fine stock himself, is a member of the Commercial Club and of the committee. The committee appeared before the State board of agriculture this week and is getting encouragement on all hands. The members point to their good railway facilities—two trunk lines, east, west and south, beside a branch which crosses or connects with every line of railway in Nebraska. They also make a point of the fact that Manhattan, nine months of the year, cares for 2000 College students in addition to its regular population. The immense amount of hauling in the transportation of supplies has long made it desirable to build spurs from the railway tracks to the College grounds. The most feasible route crosses the tract which the town proposes to secure for the State. L. R. Brady, whose active interest in the College and the town has brought reward before, has interested officials of the railroads and secured their coöperation in the matter of transportation.

To the State at large and to the broadest people even in the interested towns it is a question of "first get the fair," the matter of location being secondary. But the suggestion of Colonel Harris that the fair be located beside the State's agricultural college seems to have fallen in good soil, and it may soon be up to Man-

hattan to simply prove that it can rise to the occasion and show the State at large that it can swing the deal. It has lots of friends for the job.—*The Breeders Special*.

New Officers Elected.

The officers elected at the various associations held at the College during the winter vacation are as follows:

Kansas Corn Breeders' Association.—President, W. R. Hildreth, Altamont; treasurer, J. J. McCray, Manhattan; secretary, L. E. Call, Manhattan; directors for one year, J. G. Haney, Oswego; Ernest W. Young, Lawrence.

Kansas State Dairy Association.—President, T. A. Bowman, Topeka; secretary and treasurer, I. D. Graham, Topeka.

Kansas State Veterinary Medical Association.—President, J. F. Jones, Arkansas City; first vice-president, H. S. Maxwell, Salina; second vice-president, C. B. McClelland, Lawrence; secretary and treasurer, Burton R. Rogers, Manhattan; executive board for one year, W. S. King, W. H. Hobbs, C. B. Kern.

The Kansas Butter Makers' Conference did not see fit to organize and elect officers, although the sentiment was to elect officers in the future and to hold more meetings. Great interest was taken in the scoring of butter by the butter makers themselves. There were seventeen tubs of twenty pounds each entered in the contest.

Kansas Good Roads Association.—President, H. W. McAfee, Topeka; secretary, Albert Dickens, Manhattan. A committee of four was appointed from this association to confer with Judge Sam Kimble to draft a bill for a set of new and improved road laws, which shall be presented for passage at the next session of our State legislature. The following are the committee: Judge Sam Kimble, chairman, Manhattan; I. D. Graham, Topeka; C. F. Miller, Fort Scott; C. A. Mills, Topeka; E. B. McCormick, Manhattan.

Swine Breeders' Association.—(Poland-China Breeders) President, J. J. Ward, Belleville; vice-president, C. W. Dingham, Clay Center; secretary-treasurer, L. D. Arnold, Abilene. (Berkshire Breeders) President, C. E. Sutton; secretary-treasurer, T. F. Guthrie. The Berkshire breeders will hold two sales of Berkshires each year at Manhattan, the second Wednesday of March and November. (Duroc Jersey Breeders) President, George Kerr; vice-presidents, James L. Cook and W. C. Whitney; secretary-treasurer, Carl Thompson.

More Farmers' Institutes.

The first circuit of farmers' institutes for the winter is now announced as follows:

Circuit No. 1.—Council Grove, January 27 and 28; Osage City, January 28; Madison, January 29; Eldorado, January 30; Peabody, January 31 and February 1; Harper, February 3; Medicine Lodge, February 4; Conway Springs, February 5.

Circuit No. 2.—Osawatomie, February 17; Cadmus, February 18; Blue Mound, February 19; Richmond, February 20; Edgerton, February 21 and 22; Piper, February 25; McLouth, February 26; Nortonville, February 27; Winchester, February 28; Valley Falls, February 29.

Circuit No. 3.—Clifton, February 17; Greenleaf, February 18; Frankfort, February 19; Centralia, February 20; Seneca, February 21; Onaga, February 24; Emmett, February 25; Overbrook, February 26; Michigan Valley, February 27; Rossville, February 28; Wamego, February 29.

Circuit No. 4, March 9 to 21.—This will be in western and northern Kansas, to include Hoxie, Cawker City, Wayne, and so on south to Chapman. Definite announcements of this will be made later. For the most part, the winter and spring meetings will be at the smaller towns. Other meetings may be held in both southwestern and southeastern Kansas if enough requests come in to make good circuits.

Elections of Student Officers.

The election of officers for the class organizations and the literary societies of the College, held this month, resulted as follows:

CLASSES.

Senior.—Fred M. Hayes, president; Clara Schield, vice-president; Helen Huse, secretary; Bernice Deaver, treasurer; Dora Harlan, marshal.

Junior.—Guy Rexroad, president; Mabel Hazen, vice-president; Edna Jones, secretary; Lulu Docking, treasurer; Ella V. Brooks, marshal.

Sophomore.—E. H. Dearborn, president; Roy Johnson, vice-president; V. C. Bryant, treasurer; Nannie Carnahan, secretary; W. Droge, marshal.

Freshman.—Ray Hull, president; Virgil Cunningham, vice-president; Elsie Schmidler, secretary; Ray Anderson, treasurer; J. Z. Martin, marshal; Nell Hickock, assistant marshal.

LITERARY SOCIETIES.

Alpha Beta.—L. S. Clark, president; Bessie Tolin, vice-president; F. E. Wilson, recording secretary; G. S. Christy, corresponding secretary; V. G. Manalo, treasurer; Bernice Deaver, critic; L. B. Mickel, marshal; Carrie Harris, assistant marshal.

Webster.—Fred Hayes, president; Sol. W. Cunningham, vice-president; R. E. Caldwell, recording secretary; V. C. Bryant, corresponding secretary; A. J. Ostlund, treasurer; J. Bond, critic; E. O. Sechrist, marshal; E. H. Schroer, assistant marshal.

Hamilton.—H. A. Praeger, president; W. T. McCall, vice-president; Seneca Jones, recording secretary; G. C. Rexroad, corresponding secretary; G. E. Thompson, critic; Stanley Clark, marshal; J. W. Norlin, assistant marshal.

Ionian.—Elsie Kratzinger, president; Helen Sweet, vice-president; Anna Harrison, recording secretary; Amanda Kittell, corresponding secretary; Helen Halm, critic; Jennie Williams, marshal; Marie Bardshar, assistant marshal.

Eurodelphian.—Jessie Marty, president; Grace Smith, vice-president; Alice Tucker, recording secretary; Lizzie Hassebroek, corresponding secretary; Eleanor March, treasurer; Minnie Forseman, critic.

Franklin.—Elmer Bull, president; Amy Elder, vice-president; Edna Cockrell, recording secretary; R. M. Platt, corresponding secretary; Karl Musser, treasurer; Lulu Porter, critic; A. W. Kirby, marshal; Almira Kerr, assistant marshal.

Athenian.—A. R. Snapp, president; Fritz Harri, vice-president; A. H. Wright, recording secretary; Edgar Houk, corresponding secretary; E. L. Alspaugh, treasurer; O. M. Kiser, critic.

ASSOCIATIONS.

Athletic Association.—C. F. Blake, president; A. G. Kittell, vice-president; Al. Strong, secretary; Prof. J. V. Cortelyou, general manager.

Agricultural Association.—Ralph Hull, president; A. R. Snapp, vice-president; F. B. Milliken, secretary.

Engineers' Association.—J. S. Richards, president; M. C. Donley, vice-president; Harry Momyer, secretary.

Veterinary Association.—D. E. Gall, president; J. M. Murray, vice-president; Peter J. Meenen, secretary.

The annual report for the past fiscal year of the College Experiment Station is in the hands of the State printer and will be mailed in a few days.

Local Notes.

The Manhattan city schools have 990 pupils enrolled.

The Domestic Science Department is so crowded that classes are being taught in the offices.

The Animal Husbandry Department sold three Hereford cows last week to F. W. Roepke, of Barnes, Kan.

Miss Daisy Zeininger was called to her home at Wichita last Wednesday on account of the death of her mother.

The Hamilton Literary Society celebrated its victory in the intersociety spelling match by a big bonfire at the corner of the campus.

Contractor Stingley says that, weather permitting, he will begin work on the roof of the new Domestic Science and Art Hall about the first of February.

The Esperanto club has forty members this term. It meets every Wednesday afternoon in Professor Roberts' class room, and reports progress.

S. C. Hill, of Stafford county, visited College and his son, who is a student here, on his return trip from Kansas City, where he sold several car-loads of stock.

The twenty-sixth annual state convention of the Y. M. C. A. will be held at Wichita, February 6 to 9. The College will be represented by Sec. Wm. Davis and fifteen students.

With four green men on their team the College managed to score 18 against twice that number made by Nebraska University in a basket-ball game played at the Manhattan rink on January 15.

Professor Headlee and Assistant Scheffer address the Topeka Alfalfa Club to-day (Saturday) on subjects pertaining to alfalfa raising. Professor Headlee speaks on Alfalfa Insect Pests, and Professor Scheffer will discuss animal pests in general, but especially the gopher and his extermination.

Miss Nina Foltz, a freshman student, died Friday morning at her home, at corner of Seventh and Fremont streets, Manhattan, of peritonitis. Her remains were buried to-day (Saturday). Miss Foltz was a bright and lovable character and a good student who will long be remembered by her many College friends.

Senator Long has introduced a joint resolution in the United States Senate to require the Secretary of the Interior to certify certain land to the State of Kansas for the benefit of the State Agricultural College. This grows out of the act of July 2, 1862, granting land to states for the benefit of agricultural colleges. Kansas was entitled to 90,000 acres and received a total of only 82,313.52 acres, because out of the lands actually certified a part were later found to be within railroad grants and counted double, so that the College was actually short that number of acres. The joint resolution seeks to restore such acreage to the State.

The Library has recently added a fine golden oak catalogue case to its equipment. The case has 120 drawers and holds 720,000 cards. It was manufactured in the Chicago factory of the Library Bureau. Miss Boyd and her assistants have already re-catalogued all the geological survey and Smithsonian publications.

The Farmers' Institute Department is mailing pamphlet No. 3 of the Agricultural Educational Series, a little booklet on "Hygienic Cookery," prepared by Mrs. Henrietta W. Calvin, professor of domestic science in this College. The pamphlet is similar in character and scope to the previous numbers of the series. It covers 58 printed pages and treats the subjects of food principles, the cookery of proteids, starch, sugar, and cellulose, the selection and cookery of vegetables, cereals and eggs, the preparation of milk foods, the cookery of meat, the baking of bread, the use of yeast, the testing of food substances, the preservation of food, the problems of fermentation, and many others. It also contains a list of reference books and farmers' bulletins on these subjects. This pamphlet will be mailed to any person interested on request to the Extension Department.

Alumni and Former Students.

William Allen Buell was born Monday, January 20, at Roanoke, Texas, to T. W. Buell and Marian (Allen) Buell, both of the class of 1904.

S. S. Fay, '05, is now assistant in the department of soils of the Iowa State College, Ames, and may be addressed in care of that institution.

E. B. Coulson, '96, Ashton, Idaho, with Jessie (McClurg) Coulson, second-year student in 1896, visited the College last week for the first time in over ten years. Mr. Coulson is civil engineer for the Oregon Short Line Railway.

Chas. A. Scott, '01, has been elected professor of forestry in the Iowa State College and has entered upon his duties. His address is Station A, Ames, Ia. He finds his new field very inviting, and we can entertain no doubt that he will succeed, as his education and experience have amply prepared him for the work.

J. A. Conover, '98, is now at Tuskegee Normal and Industrial Institute helping that institution in a two-weeks' short course in agriculture. He is advocating the introduction there of a woman's short course. He hopes to be of considerable service to the institution in systematizing their work in those courses. Mr. Conover's work in the Dairy Division of the Department of Agriculture is largely of an educational character, of which this is an example. With Mrs. Conover he has lately moved his residence to Washington, D. C., where mail may be addressed to him in care of the Dairy Division, Department of Agriculture. He is still interested in the progress of the College, and finds it hard to realize the great growth that has taken place since he left.

Board of Instruction (concluded).

JACOB LUND, M. S. (K. S. A. C.)	Superintendent Heat and Power Department
JOHN H. MILLER, A. M.	Superintendent Farmers' Institutes
MISS LORENA E. CLEMONS, B. S. (K. S. A. C.)	Secretary
CLARENCE L. BARNES, D. V. M. (Cornell)	Asst. Professor of Veterinary Science
JOHN O. HAMILTON, B. S. (Chicago)	Assistant Professor of Physics
ANDREY A. POTTER, S. B. (Mass. Inst. Tech.)	Asst. Professor of Mechanical Engineering
ROBERT H. BROWN, B. M. (Kan. Con. of Music), B. S. (K. S. A. C.)	Asst. Professor of Music
BENJ. R. WARD, A. M. (Harvard)	Assistant Professor of English
GEO. A. DEAN, M. S. (K. S. A. C.)	Assistant Professor of Entomology
GEORGE F. FREEMAN, B. S. (Ala. Polytech. Inst.)	Assistant Professor of Botany
GEO. C. WHEELER, B. S. (K. S. A. C.)	Assistant Professor of Animal Husbandry
WALTER E. MATHEWSON, B. S. (K. S. A. C.)	Assistant Professor of Chemistry
WILLIAM H. ANDREWS, A. B. (Univ. of Chicago)	Assistant Professor of Mathematics
Miss Ada Rice, B. S. (K. S. A. C.)	Instructor in English
Miss Ella Weeks, A. B. (U. of K.)	Instructor in Drawing
Miss Daisy Zeininger, B. A. (Fairmount)	Instructor in Mathematics
Leonard W. Goss, D. V. M. (Ohio State University)	Instructor in Veterinary Science
Robert E. Eastman, M. S. (Cornell University)	Instructor in Horticulture
Miss Ula M. Dow, B. S. (K. S. A. C.)	Instructor in Domestic Science
William L. House	Foreman of Carpenter Shop
Miss Gertrude Barnes	Assistant Librarian
Louis Wabnitz	Foreman of Machine Shops
Miss Ina E. Holroyd, B. S. (K. S. A. C.)	Assistant in Preparatory Department
Ambrose E. Ridenour, B. S. (K. S. A. C.)	Foreman of Foundry
Miss Emma J. Short	Assistant in Preparatory Department
Miss Ina Cowles, B. S. (K. S. A. C.)	Assistant in Domestic Art
Theo. H. Scheffer, A. M. (Cornell University)	Assistant in Zoölogy
Miss Kate Tinkey	Assistant Librarian
Earl N. Rodell, B. S. (K. S. A. C.)	Assistant in Printing
Roy A. Seaton, B. S. (K. S. A. C.)	Assistant in Mechanical Engineering
M. Francis Ahearn, B. S. (Mass. Ag. College)	Assistant in Horticulture
Miss Gertrude Stump, B. S. (K. S. A. C.)	Assistant in Domestic Art
M. Sheldon Brandt, Ph. B. (Yale)	Assistant in Architecture and Drawing
Heman A. Wood, B. S. (Olivet)	Assistant in Chemistry
Chas. Yost	Assistant in Heat and Power Department
Earle B. Milliard	Foreman of Blacksmithing
J. T. Parker	Assistant in Woodwork
J. D. Magee, A. M. (Chicago)	Assistant in Mathematics
E. G. Meinzer, A. B. (Beloit)	Assistant in German
Miss Florence S. Latimer, B. M. (Ferry Hall Seminary)	Assistant in Music
Miss Marjorie Russell (Mechanics' Institute)	Assistant in Domestic Science
Herbert F. Bergman, B. S. (K. S. A. C.)	Assistant in Botany
Burton Rogers, D. V. M. (Iowa State College)	Assistant in Veterinary Science
Miss Clara Willis (Framingham Normal)	Assistant in Domestic Science
C. O. Swanson, M. Agr. (Minn.)	Assistant Chemist, Experiment Station
Herbert H. King, M. A. (Ewing College)	Assistant in Chemistry
Edw. C. Crowley, Ph. B. (Yale)	Assistant in Chemistry
Hugh Oliver	Assistant in Heat and Power Department
Miss Charlaire Furley, B. A. (Fairmount)	Assistant in Preparatory Department
Miss Jessie Reynolds, A. B. (K. U.)	Assistant in Preparatory Department
Leland E. Call, B. S. (Ohio State University)	Assistant in Agronomy
Miss Mary F. Nesbit, A. B. (Illinois University)	Assistant in Mathematics
Miss Annette Leonard, A. B. (K. U.)	Assistant in English
William C. Lane, B. S. (K. S. A. C.)	Assistant in Physics
Louis H. Beall, A. B. (Denison)	Assistant in English
Miss Flora C. Knight, A. B. (Uni. of Wyoming)	Assistant in English
Miss Grace H. Woodward (Boston School of D. S.)	Assistant in Domestic Science
Miss Nellie Cave	Assistant in Music
Miss Anna I. McKirahan	Assistant in Music
Miss Margaret Mack (K. S. N.)	Assistant in Preparatory Department
Edwin G. Schafer, B. S. (K. S. A. C.)	Assistant in Agronomy
Orin A. Stevens, B. S. (K. S. A. C.)	Assistant in Botany
Charles E. Bassler, D. V. M. (K. S. A. C.)	Assistant in Veterinary Science
Miss Mary W. Hancock (Mechanic's Inst.)	Assistant in Domestic Art
S. W. McGarrah, A. M. (Grove City College)	Assistant in Mathematics
Carl G. Elling, B. S. (K. S. A. C.)	Assistant in Animal Husbandry
Arthur L. Peck, B. S. (Amherst)	Assistant in Horticulture
Kirk H. Logan, B. S. (K. U.)	Assistant in Physics
C. A. Arthur Utt, B. S. (Cornell College)	Assistant in Chemistry
Miss Florence Warner, A. B. (Illinois University)	Assistant Librarian
Miss Anna Gordon, A. B. (Iowa College)	Assistant in Preparatory Department
Loren Clark	Assistant in Printing
Miss Bertha M. Johnston (Simmon's College)	Assistant in Domestic Science
Harrison E. Porter, B. S. (K. S. A. C.)	Assistant in Mathematics
William Neill	Dairy Herdsman
G. A. Porteous	Herdsman
Wm. A. Lamb	Poultryman
Floyd Howard	Farm Foreman
William R. Lewis	Custodian

THE INDUSTRIALIST

Historical Society

Vol. 34

No. 17

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Manhattan, Kansas



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# The Industrialist.

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|--------------------------|-----------------|
| PRES. E. R. NICHOLS..... | Editor-in-Chief |
| PROF. J. D. WALTERS..... | Local Editor    |
| PROF. J. T. WILLARD..... | Alumni Editor   |

## TERMS AND VACATIONS.

### FALL TERM, 1907, THIRTEEN WEEKS.

Thursday and Friday, December 19, 20..... Examination at close of term

### WINTER TERM, 1908, TWELVE WEEKS.

Monday, January 6..... Examination for admission, at nine A. M.  
Tuesday, January 7..... Winter term begins  
Tuesday, January 7..... Short courses in agriculture and dairying begin  
Saturday, February 1..... Annual intersociety oratorical contest  
Saturday, February 15..... Mid-term examination  
Thursday, March 19..... Annual concert  
Thursday and Friday, March 26, 27..... Examination at close of term

### SPRING TERM, 1908, ELEVEN WEEKS.

Monday, March 30..... Examination for admission, at nine A. M.  
Tuesday, March 31..... Spring term begins  
Saturday, May 9..... Mid-term examination  
Tuesday, May 19..... Beginning of summer course in domestic science  
Tuesday and Wednesday, June 16, 17..... Examination at close of year  
June 14 to 18..... Exercises of Commencement week  
Thursday, June 18, at ten A. M. .... Commencement  
June 19 to September 16..... Summer vacation

### FALL TERM, 1908,

Wednesday, September 16..... Examination for admission, at nine A. M.  
Thursday, September 17..... College year begins

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(Board of Instruction concluded on last page.)

# THE INDUSTRIALIST.

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VOL. 34.

MANHATTAN, KAN., FEB. 1, 1908.

No. 17

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## ***Higher Education in Agriculture, the Mechanic Arts, and Domestic Science.***

During the last session of Congress, Representative Charles R. Davis of the third congressional district of Minnesota presented to the lower house a bill known as H. R. 24757. This measure is designed to promote throughout the states and territories technical secondary education in agriculture, mechanic arts, and home economics. In brief, it proposes to extend the provisions of the Morrill Act of 1862 by placing a practical, industrial education and training within easy reach of the masses. The bill is designed to secure simple justice to the workers and home makers of our country.

The bill was introduced during the closing days of the last session and therefore there was no time for that body to give consideration to its provisions, but the large number of favorable letters received from individuals and organizations throughout the country and the press editorials convinced Mr. Davis that the demand for the plan of education as embodied in his bill was general. Commercial clubs, boards of trade, educators, farmers' organizations, farmers' institute lecturers, manufacturers' associations, technical instructors and teachers in agriculture, mechanic arts and home economics—in fact, practically all agencies and organizations, as well as hundreds of individuals who are interested in developing a saner, broader and more practical education for the masses of our people—at once became interested in the Davis bill and offered to coöperate and lend all possible assistance to secure the passage of the measure at the present session of congress. The bill has been reintroduced and bids fair to become a law.

The bill provides an annual appropriation for industrial education in agricultural high schools and in city high schools and for branch agricultural experiment stations, and regulating the expenditure thereof.

Its first paragraph reads: "Be it enacted: That there shall be, and hereby is, annually appropriated, out of any money in the

treasury not otherwise appropriated, to be paid, as hereinafter provided, to each state and territory for the maintenance of instruction in agriculture and home economics in agricultural high schools of secondary grade and instruction in mechanic arts and home economics in city high schools of secondary grade, a sum of money equal to 10 cents per capita of the population of each state and territory, respectively, as shown by the last preceding national or state census, as shall be apportioned by the secretary of agriculture and estimated for in the annual estimates submitted to Congress for the Department of Agriculture: Provided, That the funds thus appropriated shall be used only for instruction in agriculture, mechanic arts, and home economics, and that all states and territories and all schools accepting these funds shall provide other funds with which to pay the cost of providing the necessary lands and buildings and of instruction in all general studies required to make well-rounded high-school courses of study: And provided further, That not less than one-half of the sum thus appropriated to any state or territory shall be expended for instruction in agriculture and home economics in agricultural high schools maintained under state authority in rural communities, and the number of such agricultural high schools which shall be entitled to receive the benefits of this act in any one state or territory shall not exceed one school for each ten counties in that state or territory."

The second section providing for branch experiment stations reads: "There shall be, and hereby is, annually appropriated out of any money in the treasury not otherwise appropriated, to be paid, as hereinafter provided, to each state and territory for the maintenance of branch agricultural experiment stations under the direction of the state agricultural experiment stations now established or which may hereafter be established in accordance with the act of congress approved March 7, 1862, the sum of \$2500 for each branch experiment station already established by legislative enactment of the respective states and territories, or which shall be established by said states or territories in connection with agricultural high schools as appropriated for by this act: Provided, That no state or territory shall be entitled to the benefits of section 2 of this act until its legislature shall by law provide for the establishment of such branch stations and shall provide annually for the equipment and maintenance of such branch stations a sum at least equivalent to that appropriated annually to the state or territory under section 2 of this act; and the sum paid to each state or territory under section 2 of this act shall be applied only

to paying the necessary expenses of conducting at such branch experiment stations experiments bearing directly upon the agricultural industry of the United States, having due regard to the varying conditions and needs of the respective states or territories and the respective agricultural regions therein."

Section 3, to provide for the manner of paying the appropriated amounts to the different states and institutions and the method of making annual reports of the work accomplished to Congress.

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### ***Clean Milk.***

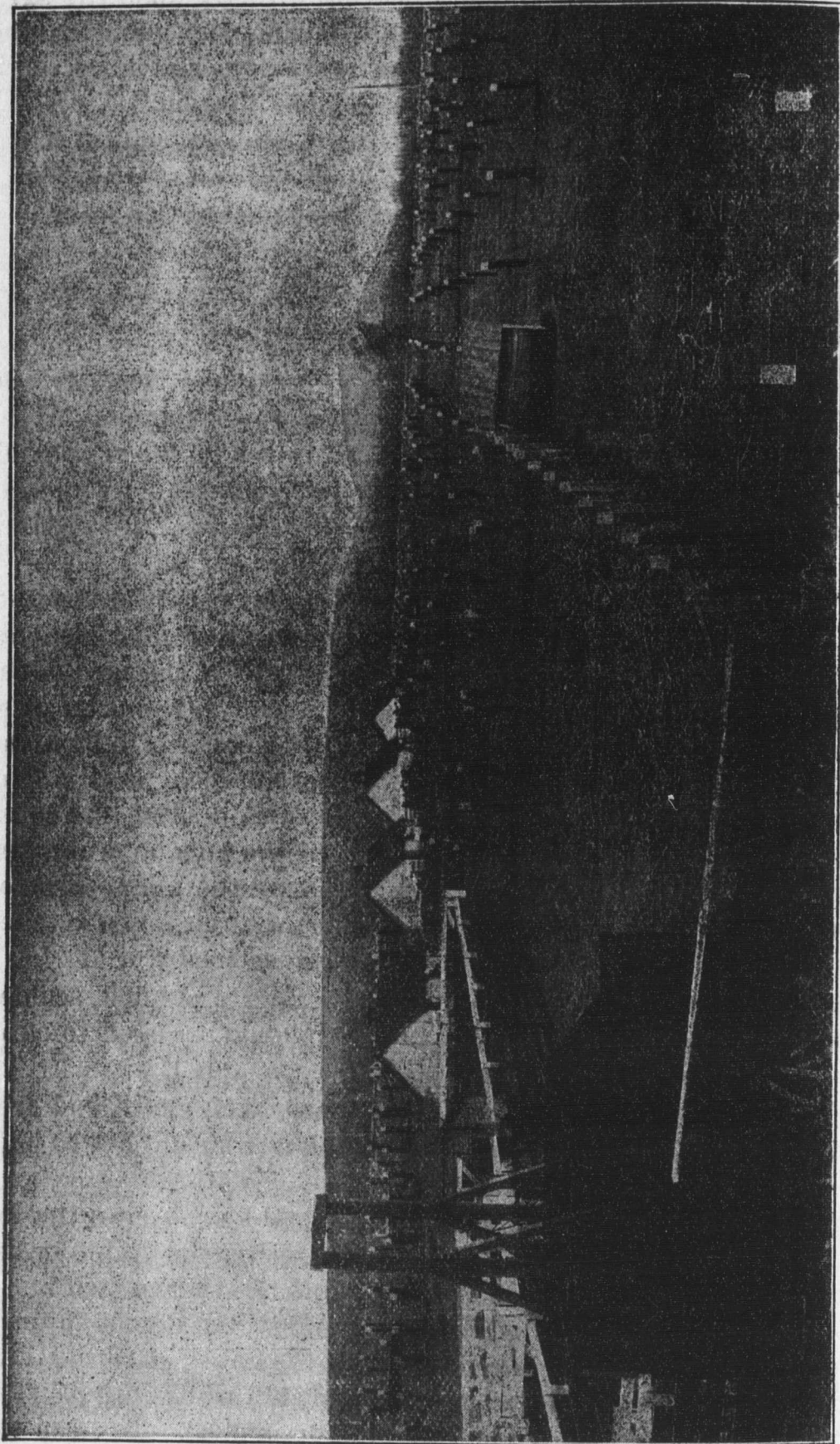
The present agitation for high-grade dairy products, and especially the movement in large cities for purer, cleaner and better milk, is encouraging. It means improved methods in the care and feeding of the milch cow and improved methods in handling the milk. How can clean, wholesome, palatable milk be produced is one of the all important questions of to-day. To produce such an article the following rules should be observed:

FIRST.—The herd must be healthy and kept free from disease, as milk from sick or ailing cows is not pure. Care must be taken that no diseased udders are among the cows. A diseased udder may seem all right and the milk used for delivery, but on close examination the milk from one or more of the teats will be found thin and of a bluish, watery color. Reject all such, as it is dangerous for food. Indigestion among the cows is often the cause of a material change in the composition of the milk, and unfortunately this trouble in cows is undetected by the inexperienced manager or milker. The milk flow is short, but no notice is taken of it until the cow becomes ill enough to refuse food.

SECOND.—All milk utensils must be properly cleaned, scalded or steamed just before use. No cloths should be used to clean these utensils, but instead use a brush of good quality.

THIRD.—The stable must be kept clean, well aired, and free from dust or dirt. Chickens or other animals should not be kept in the same stables with dairy cows.

FOURTH.—To keep clean and healthy stables, observe the following: During the winter time when entering the stable in the morning the first thing to do is to examine the thermometer. If the stable is hot, it should be aired thoroughly, but do not chill the cows. The airing can best be done while the cows are eating their grain rations, as they will be less liable to chill while eating. The stable should be cleaned before the milking is done. To clean the cows, take a brush in one hand and a damp cloth in the other.



Experimental Feeding Pens, Kansas State Agricultural College.

Brush all the dirt and dust off the sides and belly, and with the cloth wipe the udder. When ready to begin milking, wash the hands with soap and water, and with a brush clean the fingernails. Wash the hands after milking each cow. Do not expose the milk more than is necessary while in the stables. It would be much better to take it direct to the milk room and run it over a cooler. Cool down to 45 degrees F. Be careful that dust from the stables or elsewhere does not blow into the milk room. After the milking is finished, if any of the cow's teats are found dry or harsh take a clean cloth, rubbing into it a small amount of vaseline, and with this cloth rub the teats of each cow. This will be found to keep the teats in splendid condition. Avoid washing the udders during the winter time, except when it is absolutely necessary. Plenty of bedding should be used. Saw-dust is preferable when dry. Milk handled over saw-dust is said to contain less bacteria than the milk that is handled over straw or hay.

FIFTH.—The long hairs should be clipped from the udders of the cows. Better still is the singeing process. This can be done with the miner's lamp, but great care is necessary in this operation as there is danger of burning the teats or setting the barn on fire, and should not be attempted until all the straw is first removed from the stalls. Allow the blaze from the lamp to touch the hair, and with the other hand rub the spot instantly to extinguish the burning hairs. After this operation is finished the singed udders should be washed with soap and water. A liberal supply of air-slacked lime should be used in the gutters in the rear of the stall. Milking cows should not drink ice-water, as it causes indigestion and is said to cause garget. Give plenty of exercise, especially on sunshiny days. When cleaning the gutters in the morning, be careful to observe that each cow has a reasonable amount of soil behind her in the gutter. If a scarcity is noticed, she should be immediately attended to. If little or none is observed, take prompt action, otherwise impaction of the rumen will take place, with a possible loss of the animal. WILLIAM NEILL.

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### *The Norway Poplar.*

Tree planters throughout the northern portion of the middle west have had brought to their attention lately the extraordinary value of the Norway poplar, a near relative of the common cottonwood, which possesses fine qualities that bid fair to raise the prestige of the whole cottonwood family.

This cottonwood is shrouded in mystery, so far as its origin is concerned. It bears no cotton, and is reproduced entirely from

cuttings. The tree grows straight and lean, and it is said that the bark never scalds or cracks. The wood is straight-grained and suitable for lumber. It splits easily, seasons quickly, and makes excellent fuel.

The Norway poplar grows very rapidly. In Minnesota it has been known to grow fifty feet high with a diameter of seventeen inches in fourteen years. It makes a good shade-tree, retaining its leaves until late in the autumn, and on account of its rapid growth should prove very desirable for windbreaks and shelter-belts. So far as is known at present, this tree is perfectly hardy and will grow under a variety of soil and moisture conditions. It seems, however, to respond quickly by increased growth to cultivation and care.

The advantage which the Norway holds over the Carolina poplar, one of the most popular of cottonwoods, is chiefly in its greater hardiness and better form, and the seemingly superior quality of its wood is shown in preliminary studies made by the United States Forest Service. It will be some time before the Norway poplar will be available for wide-spread planting, since cuttings of the true variety are at present very scarce and hard to obtain.— *U. S. Forest Service.*

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### **Hickory.**

"No wood will be more difficult to replace when the approaching shortage in the supply of hardwoods overtakes us than the hickory," one of the Foresters in the employ of the Government recently said. The truth of this statement is not realized by anyone more than the practical men of the various trades whose future prosperity is measured by the available supply of this valuable timber.

Hickory ranks only twelfth among the hardwoods in the country's annual timber cut, according to the census report for 1906. So far as quantity is concerned it is not to be compared with white oak or yellow poplar. But it is used to-day for a number of purposes which require great toughness and great strength, and no other wood occurring in considerable quantity combines these properties in a greater degree than do some of the hickories.

Peculiar interest is given to the situation by the fact that hickory is distinctively an American genus. It occurs only in the eastern part of the United States, and large quantities of hickory handles, spokes, wheels, and other parts of vehicles, and farm implements are exported each year to all parts of the world.

The requirements of the trade are very exacting. Hickory timber to be serviceable must be heavy, clear and straight grained. To this very essential qualification, custom and tradition have added an unnecessary burden in the shape of grading rules which discriminate against red hickory, and also against iron streaks, small bird pecks, and hard knots in the wood, which may not really affect the strength at all.

Practical users of this timber have realized for years that a revision of the grading rules was not only advisable but necessary, and now the National Hickory Association of Chicago has requested the United States Forest Service to coöperate with it in the revision of the grading rules for vehicle and agricultural implement stock. This association is composed largely of hickory and oak users, and its members represent the wagon, carriage, spoke, handle, hardwood dimension and agricultural implement manufacturers, together with the accessory trades.

The grading rules for the classes of material used by the manufacturers of this association are to-day largely what they were twenty-five years ago. The dissatisfaction constantly arising from the inadequacy of the present rules calls for a complete revision to make them conform with present-day conditions.

During the past two years the Forest Service has been conducting a study of the vehicle industry, supplemented by a large number of tests to determine the relative effect of various defects upon the strength of vehicle stock, and to ascertain the relative strength of white and red hickory. The results of these studies have been made the subject of a Forest Service publication which will be issued shortly.— *U. S. Forest Service.*

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### ***New College Buildings.***

The remarkable growth of the Kansas State Agricultural College in recent years has made it almost impossible to get new buildings as fast as needed. Last January the new \$50,000 horticultural building was occupied by the Departments of Horticulture and Botany, relieving the library building somewhat and taking the classes in horticulture out of old rooms not well fitted for class use. The Bacteriology and Entomology Departments at once "swarmed" into the vacated rooms in the library, and all buildings were as crowded as before.

Last summer two other new buildings were begun, a \$70,000 Domestic Science and Art Hall and a \$70,000 building for the Veterinary Department. But the fall term showed an increased

attendance of over three hundred and the same old cry for "more room" is now heard again. In June of this year ground will be broken for an \$80,000 engineering building. The Engineering Departments here have had a phenomenal growth, the approximate classification now being over six hundred for the work in mechanical and electrical engineering. The new civil engineering course just established, work to be offered next September, will easily bring another hundred students, which with the usual increase in the Mechanical and Electrical Departments will probably mean that September, 1908, will show an attendance of eight hundred students for engineering and architecture, and the new engineering building will not be ready for use until September, 1909. Thus the crowded condition will last another year. By that time it will be seen that one great need is for a new building for general college work, or a remodeling and enlarging of the main building, and another is for a drill hall to decently accommodate the six hundred or more students who take military drill.

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### ***Library Regulations.***

The following regulations were passed by the Faculty, regarding the use of the Library by instructors:

All instructors, employed by the Board of Regents, are permitted to take out books for general reading for a period of six weeks, subject to call by the librarian at the end of two weeks, and a fine is incurred for each day books are kept beyond two days after the notice has been mailed. Books are subject to final return, absolutely, at the end of six weeks, every day after which a fine incurs. This rule does not apply to books drawn out for department use.

Books needed for class use may be drawn out by the head of a department for an indefinite length of time, or until called for by the librarian. An assistant desiring to draw books for class use must present a request from the head of his department for such books.

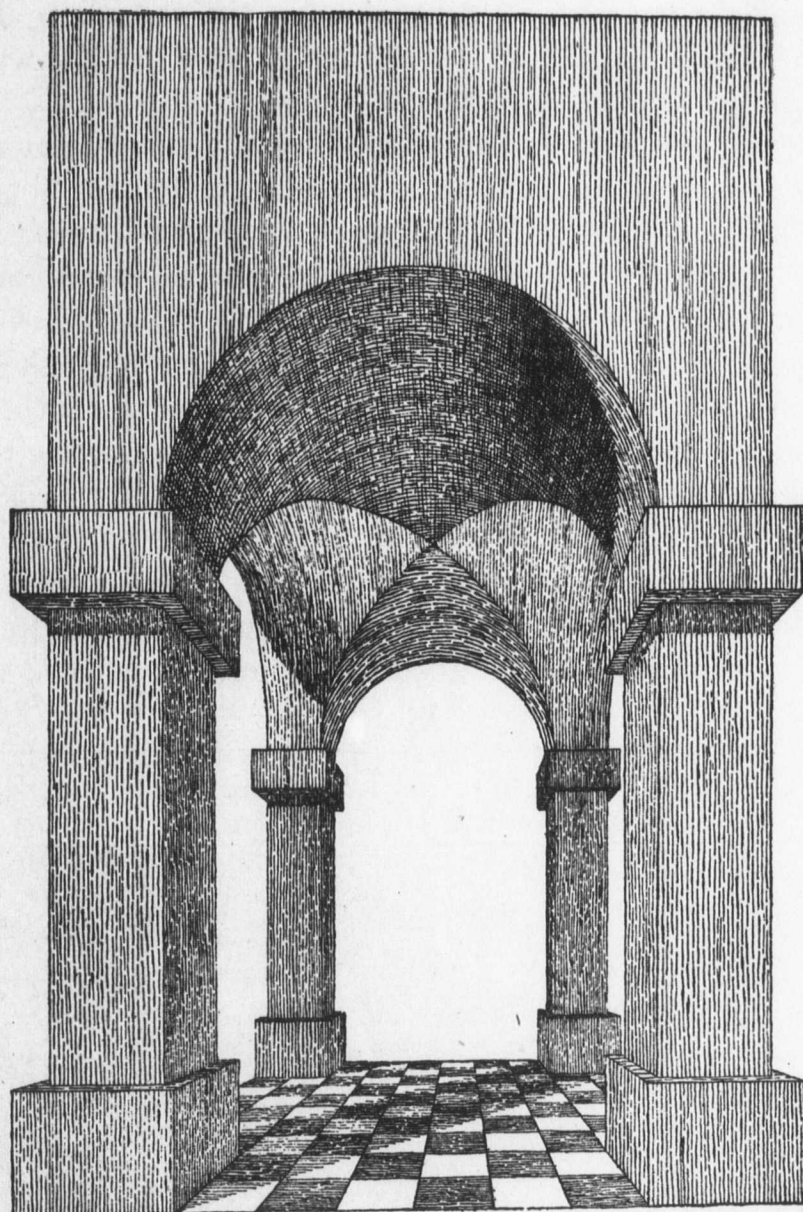
Heads of departments desiring to keep books permanently in their departments must make a list of such books and submit to the Library committee, to be recommended to the Faculty for approval.

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The Horticultural Department is justly proud of the fine celery raised by Assistant Peck, and for which a very ready market is found.

***Vaulted Arch.***

The figure on this page is printed from a photozincograph made from a pen drawing by student Chas. J. Willard, of the general science course. It represents his solution in freehand ink lines



of a regular class problem in linear perspective. Scale, dimensions of each part, source of light, ground line, center of vision and distance of the eye from the object were given by the professor. The original plates drawn by the members of the class measured about 18 by 24 inches.

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The greenhouses have many visitors, and the demand for carnations and other cut flowers is brisk.

***K. S. A. C. Weather Report for January.***

The month just closed was one of unusual mild winter weather. Bright days and mild winds made the days seem spring like.

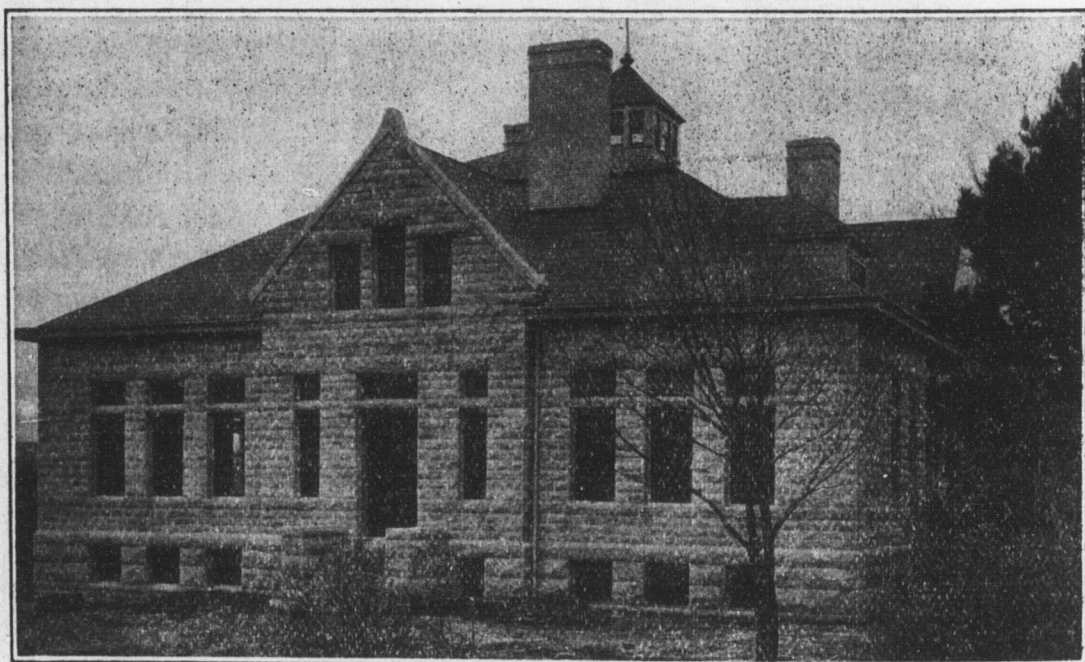
The mean temperature for the month was  $34.6^{\circ}$ , the mean temperature of January for the previous 49 years being  $25.9^{\circ}$ . The highest mean temperature recorded for the month is  $37.2^{\circ}$ , in 1880. The mean maximum temperature was  $47.2^{\circ}$ , while the mean minimum temperature was  $22^{\circ}$ .

There were 18 clear, 6 cloudy and 7 partly cloudy days. Only .15 inches of rain and melted snow were recorded for the month, which is the least amount for the month on record here, with the exception of 1870, '76, and '93, when there was no precipitation for the month.

The mean barometer was 29.22 inches, the highest for the month being 29.70 on the 23d, the lowest 28.50 on the 26th.

The average direction of the wind was northwest, the total run of wind being 7746 miles. The greatest daily run was 531 miles on the 10th; the greatest hourly run was 30 miles on the 10th.

The ground remained unfrozen for the greater part of the month, and farmers were able to continue plowing until after the fifteenth. Crops reported in good condition, but in need of moisture.



Dairy Hall, Kansas State Agricultural College.

**Local Notes.**

The Y. M. C. A. Hall is nearly finished.

The mid-term examinations will be held Saturday, February 15.

To-night (Saturday) occurs the annual intersociety oratorical contest.

The freshmen held a reception in Kedzie Hall Friday night of last week.

The Reno county students have formed a club with H. A. Pennington as chairman and J. T. Hirst as secretary.

At the Y. W. C. A. meeting last Saturday night the amount of the budget of the present year was given as \$1600—the largest Y. W. C. A. budget in Kansas.

Professor Ten Eyck was absent in Washington, D. C., this week attending a meeting of the National Seed Breeders' Association. He read a paper on "Wheat Breeding" before the assembly.

Mr. A. L. Peck made a trip to the Hays Normal last week to make a landscape design for that institution. Mr. Peck and Mr. Ahearn have just completed designs for similar work for the Kansas Normal.

Professor Willard went to Topeka Wednesday afternoon at the invitation of the wholesale manufacturers of ice-cream, in order to confer with them in reference to the problems of ice-cream testing under the Food and Drugs Law.

President Nichols went to Topeka Tuesday to attend a meeting of the State Board of Education. On Wednesday evening he attended the annual banquet of the Kansas Day Club and responded to the toast "Agricultural Education."

The following five basket-ball games have been definitely arranged for the winter term: Haskell, February 5; Washburn, February 13; State Normal, February 21; Ottawa, February 25; Baker, March 4. All five will be played at Manhattan.

The Chemical Department has just installed a 24-bottle Wizzard steam-operated milk tester for testing samples of milk, cream and ice-cream submitted by the State Board of Health in accordance with the provisions of the Kansas Food and Drugs Law.

Park Road is the name to be applied henceforth to the addition west of the city park, where several of the professors have built homes. The pioneers in the project had a meeting last week and adopted the above name. All will take notice that from this time there is no such place as "Faculty Row."

W. D. Cramer, assistant in zoölogy 1901-'02, writes that since leaving here he has finished his work at Ann Arbor and has organized a department of biology and geology in Ferris Institute, Big Rapids, Mich., with which he is now connected. He is still interested in this College and desires to keep in touch with it through its publications.

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Doctor Brink is one of the judges on the thought and composition of the orations to be delivered at the Tri-County Oratorical Contest of Morris, Marion and Dickinson counties, to be held in March.

The Duroc-Jersey sale by the well-known breeder, Grant Chapin, of Green, held at the College sales pavilion Tuesday, January 28, was quite a success. The average price of the hogs sold was about \$73.

As in past winter terms, the Domestic Science Department is again serving dinners to the members of the Faculty. The dinners are prepared and served by the short-course students to give them an opportunity for obtaining practical experience in cooking and serving. The Faculty is always willing to pay for being experimented upon by the young women.

The January number of the College *Alumnus* is one of the brightest, most interesting and handsomest of the hundred or more numbers now filed away in the book-case of the local editor. It is filled to the brim with news, musings and reminiscences from the twelve hundred alumni and the twenty-five thousand former students who call the glorious K. S. A. C. their College home. The *Alumnus* might increase in size but it could not grow brighter and better.

F. L. Williams, assistant in the Agronomy Department, is on an institute trip to Effingham, Lawrence, and Alma. He will stay three days in each place and conduct classes in corn and stock judging. The classes will consist of young farmers over 18 years old who desire to learn of the College methods of judging cereals and fine stock. A. J. Reed, of the Dairy Department, will conduct similar classes in dairy work at Lyndon, Burlington, and Columbus.

Karl Kellerman is in town and at College this week conferring with Doctor Hibbard in reference to the work which they are conducting here on soil bacteriology. Mr. Kellerman is in the Department of Agriculture, Washington, D. C., where he is in charge of investigations concerning soil bacteria, and also of methods of water purification. He will be remembered by many as a son of Prof. W. A. Kellerman, formerly at the head of the Botanical Department of this College.

Professor Kinzer received the following letter from Mr. Glenn, proprietor of the Glenn Meadow Stock Farm, Shepherdsville, Ky. It will be remembered that Mr. Glenn addressed the swine breeders one evening at the Kansas Swine Breeders' Association held at this College. He writes: "I reached home safely and in due time, with many pleasant recollections of my trip to Manhattan. Mr. Axline and myself commented on our trip upon the nice condition in which you had your stock, especially your hogs. You have the best lot of hogs that I have seen at any agricultural college, and I congratulate you on the good showing you made."

State Dairy Commissioner D. M. Wilson has just returned from a tour of inspection through Clay, Cloud, Republic, Smith and Saline counties. He is investigating the general conditions of the dairy business, and reports that much improvement in the prevailing methods is badly needed.

Prof. V. M. Shoesmith, of the Maryland Agricultural Experiment Station, has been appointed professor of agronomy in the College of Agriculture of the Ohio State University. Professor Shoesmith was born and raised on a farm near Leslie, Mich., and graduated from the Michigan Agricultural College with the class of 1901. Shortly after graduation he was appointed assistant in agronomy at the Kansas State Agricultural College and Experiment Station, where he remained for five and a half years, being promoted first to assistant agronomist for the Station and finally to an assistant professorship in the College. In 1905, while at the Kansas Agricultural College, Professor Shoesmith trained the corn-judging team which won first honors at the judging contest held in connection with the International Live Stock Exposition at Chicago. In January, 1906, he went to Maryland to take the position of agronomist at the Maryland Experiment Station. His time there has been devoted largely to the organization of the work of the department and to getting coöperation of the state through the organization of a cereal improvement association on broad and liberal lines. While at the Kansas Station Professor Shoesmith published several bulletins, one of the most recent of which is entitled "A Study of Corn." His efforts in Ohio will be devoted entirely to the development of the crop work in the Department of Agronomy. The College of Agriculture and the farmers of the state are to be congratulated upon securing the services of a man of Professor Shoesmith's experience and ability to push forward the improvement and development of farm crops in Ohio.—*Ohio State Lantern.*

### ***Alumni and Former Students.***

J. L. Pelham, '07, who since graduation has been assistant in horticulture at the Fort Hays Branch Experiment Station, has been elected instructor in horticulture in the branch Normal School at Hays, Kan.

E. R. Barker and Edna (Morrison) Barker, second-year students in 1895-'96, visited the College this week. Mr. Barker is county assessor for Miami county and had been attending a meeting of county assessors in Topeka. He is still in the mercantile business at Hillsdale, Kan.

Changes of address: A. B. Carnahan, '05, 16 Mount Avenue, Swampscott, Mass.; A. S. Stauffer, '04, R. R. No. 28, Beloit, Wis.; H. C. Haffner, '00, Hesperus, Colo.; M. W. McCrea, '93, Santa Anna, Cal.; F. R. Jolley, '95, Lake Arthur, N. M.; Harry E. Moore, '91, 815 A. Union street, Seattle, Wash.; Jennie Ridenour, '04, 3223 Sansom street, Philadelphia, Pa.; H. P. Hess, '05, and Kate (Paddock) Hess, '99, 29th and Woodland, Kansas City, Mo.

*Board of Instruction (concluded).*

|                                                                  |                                           |
|------------------------------------------------------------------|-------------------------------------------|
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| JOHN H. MILLER, A. M.                                            | Superintendent Farmers' Institutes        |
| MISS LORENA E. CLEMONS, B. S. (K. S. A. C.)                      | Secretary                                 |
| CLARENCE L. BARNES, D. V. M. (Cornell)                           | Asst. Professor of Veterinary Science     |
| JOHN O. HAMILTON, B. S. (Chicago)                                | Assistant Professor of Physics            |
| ANDREY A. POTTER, S. B. (Mass. Inst. Tech.)                      | Asst. Professor of Mechanical Engineering |
| ROBERT H. BROWN, B. M. (Kan. Con. of Music), B. S. (K. S. A. C.) | Asst. Professor of Music                  |
| BENJ. R. WARD, A. M. (Harvard)                                   | Assistant Professor of English            |
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## TERMS AND VACATIONS.

### FALL TERM, 1907, THIRTEEN WEEKS.

|                                                              |                              |
|--------------------------------------------------------------|------------------------------|
| Thursday, Friday, and Saturday, November 28, 29, and 30..... | Thanksgiving vacation        |
| Thursday and Friday, December 19, 20.....                    | Examination at close of term |

### WINTER TERM, 1908, TWELVE WEEKS.

|                                        |                                                 |
|----------------------------------------|-------------------------------------------------|
| Monday, January 6.....                 | Examination for admission, at nine A. M.        |
| Tuesday, January 7.....                | Winter term begins                              |
| Tuesday, January 7.....                | Short courses in agriculture and dairying begin |
| Saturday, February 1.....              | Annual intersociety oratorical contest          |
| Saturday, February 15.....             | Mid-term examination                            |
| Thursday, March 19.....                | Annual concert                                  |
| Thursday and Friday, March 26, 27..... | Examination at close of term                    |

### SPRING TERM, 1908, ELEVEN WEEKS.

|                                         |                                                |
|-----------------------------------------|------------------------------------------------|
| Monday, March 30.....                   | Examination for admission, at nine A. M.       |
| Tuesday, March 31.....                  | Spring term begins                             |
| Saturday, May 9.....                    | Mid-term examination                           |
| Tuesday, May 19.....                    | Beginning of summer course in domestic science |
| Tuesday and Wednesday, June 16, 17..... | Examination at close of year                   |
| June 14 to 18.....                      | Exercises of Commencement week                 |
| Thursday, June 18, at ten A. M. ....    | Commencement                                   |
| June 19 to September 16.....            | Summer vacation                                |

### FALL TERM, 1908,

|                              |                                          |
|------------------------------|------------------------------------------|
| Wednesday, September 16..... | Examination for admission, at nine A. M. |
| Thursday, September 17.....  | College year begins                      |

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(Board of Instruction concluded on last page.)

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## *Thickness of Planting Corn.*

Extensive experiments in thickness of planting corn were carried on by the Kansas Experiment Station in 1891 and 1893, as reported in Bulletins Nos. 30 and 45. As an average for these experiments the largest yields of surface planted corn were secured by planting in rows three and one-half feet apart with stalks sixteen inches apart in the row. The largest average yield from corn planted in lister furrows was secured by planting in rows four feet apart, with stalks twelve inches apart in the row, although nearly as large a yield was secured when the stalks were sixteen inches apart, and there was a little larger percentage of good ears from the thinner planting. In 1901 three varieties of corn were used in the experiment—Pride of the North, an early maturing variety; Leaming, a medium early maturing corn; and St. Charles White, a late maturing variety.

The Pride of the North corn, surface planted, gave the largest yield of corn, including also the largest per cent of good ears, when the rows were three feet apart and the stalks sixteen inches apart in the row. This variety of corn listed produced the largest yield in rows four feet apart and stalks eight inches apart in the row, although nearly as large a yield and a much larger percentage of good ears were secured when the stalks were twelve inches apart in the row.

The Leaming corn, surface planted, gave the largest yield of salable corn, which only lacked three-fourths of a bushel of being the largest yield per acre, when the rows were three feet apart and the stalks sixteen inches apart in the row. When listed the largest yield was obtained where the rows were four feet apart and the stalks twelve inches apart in the row, but the largest yield of salable corn was secured from rows four feet apart and stalks sixteen inches apart in the row.

The St. Charles White, surface planted, produced the largest weight of shelled corn when the rows were three feet apart and the stalks sixteen inches apart in the row, but the largest yield of

salable ears was secured from rows three feet apart with stalks twenty inches apart in the row. This variety, listed, gave the largest yield when planted in rows four feet apart with stalks sixteen inches apart in the row, but the largest amount of good ears was secured from the plot in which the stalks were twenty inches apart with rows four feet apart.

In 1893, only one variety of corn, a large medium late white dent, was used in the test, and the largest yield of corn, taking into account the percentage of good ears, was secured by surface planting in rows three and one-half feet apart, with stalks sixteen or twenty inches apart in the rows, while with listed corn the largest yields were recorded when the rows were four feet apart and the stalks twelve or sixteen inches apart in the row. The soil on which these trials were made was the ordinary upland soil of the Station farm, and was rather deficient in fertility. No recent experiments in this line have been undertaken at the Kansas Station.

A number of experiments in thickness of planting corn have been carried on at several of the experiment stations. Bulletin No. 33, of the Oklahoma Station, reports an experiment conducted in 1897. The corn was planted on good bottom-land, the variety being a white dent corn of medium late maturing season. In this trial the largest yield of corn, 63.5 bushels per acre, was secured from a plot containing two stalks every thirty inches, the rows being three feet eight inches apart. The next largest yield, 62 bushels per acre, came from a plot having one stalk every eighteen inches, with rows three feet eight inches apart. This corn was planted with a surface planter. It was discovered that the thicker planted corn produced the larger number of ears, but that the average weight per ear increased from the thickest to the thinnest planting. The largest yields of fodder were secured from the thickest planting, the highest yield being 6020 pounds of stover and 45.9 bushels of corn per acre, taken from the plot in which the stalks stood six inches apart, with rows three feet eight inches apart.

At the Alabama Experiment Station, as reported in Bulletin No. 88, experiments conducted in 1896 and '97 in which the corn was planted on sandy upland, poor in fertility, the largest average yield for the two years was secured when the stalks were four feet by three feet nine inches apart, making one plant to every fifteen square feet of soil. This is certainly thin planting, and it is recommended in that state to plant, on such soil, in rows five feet apart with hills three feet apart and one stalk to the hill,

planting rows of cow-peas between the rows of corn, which may act as a fertilizer to the soil and at the same time yield a crop of forage or grain.

Experiments carried on at the Missouri Experiment Station for three years, 1889 to 1891, as reported in Bulletin No. 32, gave results as follows: Two stalks per hill yielded 54 bushels of corn, three stalks 57 bushels, and four stalks 58.9 bushels per acre, respectively. The hills were three feet nine inches apart each way, and the corn was planted with the surface planter. For two years the trial was conducted on moderately fertile land, while in 1891 plantings were made on fertile land and land poor in fertility. On the fertile soil the largest yield, 70.4 bushels per acre, was secured from leaving four stalks in the hill, the hills being three feet nine inches apart each way. On the less fertile land the largest yield, 36 bushels per acre, was taken from the plot in which the corn was thinned to two stalks per hill, in hills three feet nine inches apart. This experiment brings out very strikingly the influence which fertility of soil exerts over different thicknesses of planting. The thicker the planting the larger was the yield of stover and the greater the proportion of nubbins. It was concluded that if the corn were grown for market it would be unprofitable to leave four stalks per hill, even on the fertile land, since nearly one-fourth of the crop was nubbins. This increased the expense of husking, and the actual amount of merchantable corn was slightly less when four stalks were grown than when three stalks were grown per hill.

In Bulletin No. 140, of the Ohio Experiment Station, the results of a series of experiments on "drill or hill planting" are reported. The crops were grown during the seasons of 1894 to 1897 inclusive. As an average for the four trials one stalk per hill every twelve inches, in rows three and one-half feet apart, gave the largest yield of corn—43.47 bushels per acre. The largest percentage of merchantable ears was secured by thinning the corn to one stalk every eighteen inches in rows three and one-half feet apart. The average yield from this planting, however, was 6.75 bushels less per acre than from the thicker planting. When two stalks were grown in hills twenty-four inches apart, in rows three and one-half feet apart, the yield was practically the same as when one stalk was grown in hills twelve inches apart. Four stalks per hill, in hills forty-eight inches apart with rows three and one-half feet apart, gave nearly as large a total yield as was secured from the best producing plot, but with a larger percentage of nubbins. Three stalks per hill thirty-six inches apart and four stalks per

hill forty-two inches apart gave a smaller yield of corn and a larger per cent of nubbins than the other plantings.

Bulletin No. 91, by the Nebraska Experiment Station, gives the results of some recent experiments in thickness of planting corn, conducted in 1903 and 1904. As an average for the two trials the yields from plots containing three stalks per hill was exactly the same as the yield from plots containing four stalks per hill, the hills being placed forty-four inches apart each way. In 1903 the season was comparatively wet and the thicker planting gave the larger yield, but in 1904 the drier season favored the thinner planting. The average yield for the two seasons from three and four stalks per hill was 78 bushels per acre, while two stalks per hill yielded 68 bushels per acre. Four stalks per hill gave 58 per cent, three stalks per hill 45 per cent, and two stalks per hill 32 per cent of nubbins, respectively. The average weight of the ears and the quality of the corn was greater with the thinner planting, except that one plant per hill did not produce as high a proportion of good ears as did two plants per hill, this being due to the fact that with one stalk to the hill the corn suckered more, producing many small ears. Yields of stover were secured only in the season of 1904, when the quantity increased regularly with the increased thickness of planting, one stalk per hill yielding 4322 pounds, while five stalks per hill yielded 6975 pounds of stover per acre. It was observed that a larger number of barren plants occurred in the thicker plantings.

In 1897, '98 and '99 the Georgia Experiment Station, as reported in Bulletin No. 51, secured the largest yields and best quality of corn by having rows four feet apart and the stalks three feet apart in the row. The conclusion was reached that for upland soils capable of producing 35 to 40 bushels of corn per acre, corn planted in rows four feet apart, with single stalks two feet apart in the row, would yield a larger quantity of grain than thicker or thinner planting.

As an average for eight years, the Indiana Experiment Station, as reported in Bulletin No. 50, obtained the best results from planting corn in rows three feet eight inches apart, with stalks ten and three-fourths inches apart in the rows.

The problem in planting corn seems to be to plant thick enough so that the corn will make the fullest use of the plant-food and moisture which a certain soil can supply and yet develop a thrifty stalk and a good ear. Fertile soil, therefore, requires closer planting than soil of medium or poor fertility. The thickness of planting is also regulated by the moisture supply of a soil as re-

lated to the climate and rainfall and to the capacity of the soil to hold water.

In the southern portion of the corn belt, corn should be planted thinner than in the Central and Northern States, largely because in the Southern States the stalks grow larger, and more plant-food and moisture are required to produce this large growth of stalks. For a similar reason early maturing corn may be planted a little thicker than late maturing corn, because the stalks and ears are smaller than those of late maturing corn and the supply of plant-food and moisture in the soil should produce a larger number of the smaller stalks and smaller ears than of the larger stalks and ears. The difference in thickness of planting early as compared with late or medium late maturing corn, however, should not be so different as might appear when we consider the fact that the early maturing corn grows for a shorter period than the late maturing corn, and hence may have a less supply of available plant-food and moisture to make the crop.

It appears from the experiments at this Station, as quoted above, that listed corn should be planted a little thinner than surface planted corn in order to secure the largest yield of good ears. If this is true it may be due to the fact that the plant-food available to a crop in soil which is ordinarily listed may be less than that supplied from surface planted fields of equal native fertility. The usual method of listing is to list from year to year without plowing the land. Perhaps the plowing and cultivation given the land in preparing for surface planting develops a greater supply of available plant-food, which in a favorable season may result in larger crops from surface planting, thus allowing a little thicker planting of the corn.

In dry climates, however, the listing method of planting appears to give the best results, doubtless largely due to the fact that the corn is planted deeper in the soil, thus allowing deeper cultivation, and a deeper mulch of mellow soil covers the roots of the corn when it is finally "laid by" at the close of the cultivation period. This conserves the soil moisture and prevents the soil from becoming excessively hot during the hot, dry weather of midsummer.

From a study of the experiments quoted, as related to the above discussion, I offer these suggestions with regard to the most favorable thickness of planting corn in soils of various fertility and in different sections of the corn belt. With a corn of medium maturing season, such as may usually be grown in the different sections of the country, I recommend to plant as follows:

Throughout the central portion of the corn belt, including Kansas, Missouri, Illinois, Indiana, Ohio, southern Nebraska, southern Iowa, and parts of southern Wisconsin and Michigan, on fertile land capable of producing 60 to 80 bushels of corn per acre in favorable season, plant three kernels in a hill, the hills being three and one-half feet apart each way, or in drill rows plant one kernel every fourteen inches, in rows three and one-half feet apart. On land of medium fertility, capable of producing 40 to 60 bushels of corn per acre, plant three kernels per hill, in hills three feet nine inches apart each way; or one kernel in a place, sixteen to eighteen inches apart, in rows three and one-half feet apart. On soil deficient in fertility and moisture, on which the yields may vary from 20 to 40 bushels per acre, plant two kernels in a hill, in hills three and one-half feet apart each way; or one kernel every twenty-two to twenty-four inches, in rows three and one-half feet apart.

The thickness of planting last mentioned would also be adapted to central and western Nebraska and Kansas, where the moisture supply may not be sufficient to produce the largest yields of corn. In the more northern portions of the corn belt I would increase the thickness of planting by putting one more kernel per hill under the several soil conditions described, also planting relatively thicker in the drill row, while in the more southern section of the corn-growing region the thickness of planting might possibly often be decreased under the several conditions by about one kernel per hill.

It is my experience that corn is generally planted too thick rather than too thin. Poor stands often result from planting inferior seed, which is not the fault of the method or thickness of planting. Every farmer should determine the best thickness for planting corn on his farm; then he should test the germination of his seed-corn, plant only high-grade seed, carefully regulate the planter, and plant the corn just as thick as he wants it to grow and no thicker.

#### DO MISSING HILLS OF CORN AFFECT THE YIELD?

"Will you please give me your opinion of the value of the missing hill in a corn-field? I am trying to find out whether a missing hill is a total loss or whether the hills next to it partially make up for this loss."

This is one of a number of letters, on a subject related to that of the foregoing article, received lately by the Agronomy Department of the College. The question is often asked, and we may say

we have made no direct experiments along the line upon which you desire information. Indirectly, some of our work gives some suggestions as to the effect of missing hills on the yield of the crop; for instance, in 1904, in our variety trial of corn, the corn made a rather poor stand, largely on account of unfavorable weather at planting time. At the time of harvest the stalks and ears from each row were counted and a record made of the number of missing stalks or hills. We have this record. However, we have been able to make but little out of it, since every plot of corn was of a different variety. Therefore the different plots were not comparable. The yields from the different plots varied much, as did also the stand, but since the plots were not duplicates in variety we are unable to determine whether the difference in yield was due to the variety or to the difference in the stand of corn. We made considerable study of these figures last winter with the purpose of making a report of the crop, but were unable to arrive at any definite plan by which we could make the yields comparable by using the comparative stand in the different varieties as a basis for computation.

From this study we arrived at this conclusion, however, that the yield of corn does not vary directly with the stand of corn; that is, a half stand of corn produced more than a half crop, compared with what a full stand produced. We observed that the poorer the stand the greater the yield compared to the number of stalks and ears harvested. It was our judgment at the time that a small percentage of missing stalks had very little effect on the total yield of corn, and we are quite sure that a missing hill does not mean a percentage loss in yield equal to the percentage loss in stand, and that on the average soil, in the average season, as much as 10 per cent of the stalks of corn may be missing without materially lowering the yield from the field. The stalks or hills adjacent to the missing hill do certainly develop better and produce larger ears than they may when no hills or stalks are missing.

We have observed some of the discussion along this line, which would indicate that a missing hill meant that much less corn when the crop was harvested. We believe, however, that this point has been much overdrawn. It will depend very much upon the soil and the season as to whether a small percentage of missing hills has any effect in lowering the yield of the crop. In fact, we have observed fields of corn this season which would have produced a larger yield of corn per acre if there had not been so good a stand of corn. Probably the corn was not too thick for an entirely favorable season, but during the month of August the weather was

very dry and hot in sections of this State, with the result that corn was checked in its growth, tending to produce a lower yield than would otherwise have been the case; but with a thinner stand the dry weather had less effect. It is true also, that soils which are not especially fertile will fail to bring a full stand of corn to proper development and maturity, while with a thinner stand a better yield of larger ears may result.

We believe that every farmer should plant the best seed which it is possible for him to secure and plan for a perfect stand of corn, of such thickness as the land may be adapted for in the average season. However, it is the general rule that farmers plant a little too thick, with the expectation of a favorable season, when if the season proves unfavorable a few missing hills will have no effect in lowering the yield of corn and may actually give an increased yield over a perfect stand. A. M. TENEYCK.

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### ***Investigations to Improve Range Lands.***

The government has planned a series of scientific reseeding experiments on several of the national forest ranges next spring and summer to determine under what conditions and in what manner those portions of the range which have been seriously damaged by overgrazing may be restored to their former productiveness.

A great deal of the range land in the West is overgrazed, and does not carry as much stock as formerly. The method of handling stock, particularly sheep, is perhaps more responsible for this condition than any other cause. But all causes of deterioration and all means for improving the forage crop need to be studied, that the range may be brought into the best condition to meet the imperative demand of the live-stock industry.

The plan is to establish experimental stations in several parts of the country. Probably not more than six will be tried at first, but they will be so located as to secure typical conditions. The experiments will be begun on a small scale, on five- or six-acre tracts. Both native and wild grasses will be tried, but it is believed that the plan of encouraging native grasses will meet with greater success than the introduction of cultivated species, at least in the Rocky Mountain region. In the coast ranges, with their greater rainfall, cultivated grasses are more likely to play an important part in range development.

The ranges of the Northwest have not been so seriously damaged by overgrazing as those of the Southwest, perhaps because of superior moisture conditions of the northern part of the country.

It is a fact, however, that none of the ranges support the stock which they did formerly, and reseeding experiments will therefore be undertaken in this section of the country also.

The method of handling stock is also to be considered. Every stockman knows that stock do not waste as much feed when unrestricted in their movements as when close herded. An experimental pasture was enclosed last summer in the Imnaha National Forest, in Oregon, which will be a model for others next season. In this pasture sheep were turned loose without a herder, to shift for themselves. It is too soon to draw positive conclusions from this experiment, but the sheep did well, and there was a decided lessening in the loss of forage through tramping. It looks as though a given area of ground can be made to carry a very much larger number of animals when they are allowed to graze free than when close herded. This fact, if established, will be of decided importance to stockmen.

### *The Oratorical Contest.*

The eighth annual intersociety oratorical contest of the Kansas State Agricultural College was held Saturday evening, February 1, in the Auditorium. It proved to be one of the most interesting and brilliant events of the year. Six contestants appeared on the program, representing as many literary societies, which are organized and chartered among the students. The best of feeling prevailed among the six hundred demonstrative society members, each body competing with the others for the honor in yells, songs, and exuberance of spirit. An innovation in the demonstration was the two and one-half minute allowance given each society for uninterrupted exhibition, after which the judges' decisions were announced and the prizes awarded. The following was the program rendered:

|                                                  |                           |
|--------------------------------------------------|---------------------------|
| Invocation .....                                 | Rev. D. H. Fisher         |
| Music.....                                       | Franklin Quartet          |
| Oration—"Let Us Have Peace".....                 | Miss Clara D. Schield     |
| Music.....                                       | Hamilton Trombone Quartet |
| Oration—"American Liberty and Law".....          | John Edward Martin        |
| Music.....                                       | Ionian Quartet            |
| Oration—"Frances E. Willard" .....               | Miss Grace Hawkins        |
| Music.....                                       | Eurodelphian Chorus       |
| Oration—"The Pertinent Question".....            | Miss Hallie M. Smith      |
| Music.....                                       | Alpha Beta Quartet        |
| Oration—"Evolution of American Citizenship"..... | Lee S. Clarke             |
| Music.....                                       | Webster Quartet           |
| Oration—"Whither Drifting".....                  | Solon W. Cunningham       |

Two and one-half minute demonstration by each society.

Announcement of judges' decision and presentation of prizes.

First place and \$20 in gold was awarded Miss Clara Schield, representing the Franklin society, and second place and \$10 in

gold to S. W. Cunningham, representing the Websters. All the speakers did well, and in some cases the difference between the grade of two orations was but a very small fraction of a per cent.

Following is the list of the judges on thought and composition: Prof. J. H. Gilmore, Rochester, N. Y.; Miss M. Louise Jones, Emporia, Kan.; Prof. Murray G. Hill, Ottawa, Kan. Prof. M. M. Fogg, Lincoln, Neb.; Mrs. Margaret Hill McCarter, Topeka; Hon. J. W. Gleed, Topeka, were to have been the judges on delivery, but being unable to serve their places were very acceptably filled by Prof. F. A. Metcalf, Manhattan, Kan., formerly professor of oratory here, Prof. W. S. Heusner, of the Junction City high school, and Prof. F. C. French, of the University of Nebraska.

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The United States Department of Agriculture has just issued, through the Bureau of Soils, a publication of considerable local interest, "A Soil Survey of Riley County, Kansas." It will be remembered that this survey was made something over a year ago by Messrs. Carter and Smith, the Experiment Station coöperating to a limited extent. The soil map of the county and the discussion of the soils of the locality as given by the authors make an interesting study, and the report will be of considerable value to people at a distance who desire to be made acquainted in a more detailed way with the agricultural possibilities of this county. The statements of the authors concerning the agricultural conditions of the county are reliable, and their views upon the best utilization and treatment of the different soil formations are based upon the results that have been obtained in actual farm practice.

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In speaking of wheat breeding the Topeka *Mail and Breeze* says: "Our readers who would be interested in a non-technical exposition of the methods employed in the work of wheat breeding at the Kansas Station, should write to Dr. C. W. Burkett, director of the Station, Manhattan, Kan., for a January 18 copy of the College INDUSTRIALIST. The subject is handled therein in a very interesting manner by Prof. H. F. Roberts, the botanist of the Station. Through reading it a layman may obtain some insight into methods of plant breeding with which DeVries in Holland and Burbank, and others, in this country are working. The information is free."

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### **Local Notes.**

Prof. and Mrs. Geo. F. Freeman expect to move into their new residence about February 15.

Of the seven previous contests the Alpha Betas won the first, the Ionians the next three and the Hamiltons the last three. This time it went to the Franklins.

Shige Suzuki, for several years a special student in dairying at this College, writes to Professor Walters from Sappora, Japan, that he is now taking advanced work in the Imperial University, located at that city.

The February issue of the *Popular Science Monthly* contains an article by Mrs. H. F. Roberts entitled, "The Problem of International Speech." She looks for a solution of the problem in the adoption of Esperanto.

The first edition of Mr. Scheffer's "Laboratory Manual of Zoölogy," published by P. Blakiston's Son & Co., Philadelphia, is exhausted. The publishers are now arranging for a second and larger edition, with revisions and some change in the style of binding.

President Nichols, Professor McCormick and Regent Blackburn are visiting a number of eastern establishments and institutions this week for the purpose of studying engineering buildings and equipment, with reference to the engineering building to be erected here next year.

The *Manila Cable News* of December 29 contains the following item: "Captain Pearl M. Shaffer, 25th infantry, who has been on duty as military instructor at the State Agricultural College, at Manhattan, Kan., arrived yesterday on the 'Crook' en route to his station in Mindanao. He is quartered at the Grand Hotel."

Professor Cortelyou has commenced work on the baseball schedule for the spring term. The Board of Regents at their last meeting gave the Athletic Association permission to play games outside of the State. Three games of football and six games of baseball are allowed to be played outside of the State.

At their special meeting last Tuesday night the Manhattan city dads granted petitions for about thirty-five blocks of brick and cement sidewalks. Another batch of petitions for about the same number will be acted upon at the next regular meeting, February 18. The total length of sidewalks petitioned for is nearly 35,000 feet, or about six miles.

Contract has been let for a permanent survey of the Kansas Southern and Gulf railroad—that is, the section from Westmoreland to Manhattan. The work of locating the track will be done by Engineer T. E. Williams, of the Northwestern railroad, and will begin this week. The northeast terminus of the road will probably be at Omaha, and its course from Manhattan will be southwest toward Council Grove.

The following Y. M. C. A. students left Thursday for Wichita to attend the twenty-sixth annual State convention of the Y. M. C. A., college, high school, and railroad associations included: J. S. Daniels, E. S. Taft, H. A. Praeger, C. W. Grizzell, Martin Dupray, Henry Totton, P. R. Dunton, James Bond, T. E. Wilson, L. B. Mickel, V. C. Bryant, M. G. Smith, and Wm. Davis. Secretary W. M. Davis accompanied the delegation.

We are just beginning to understand the possibilities of Kansas agriculturally. Its fifty-two million acres of rolling prairie are unsurpassed anywhere on this beautiful earth. It is the happy mean, not only in location, but also in climate. It is neither too hot nor too cold, too wet nor too dry, too windy nor too calm. Kansas is, not only figuratively speaking, "The nice juicy meat in the national sandwich," but it can furnish real sandwiches to the whole country if necessary.—*From the address by President Nichols at the Kansas Day Banquet.*

Professor TenEyck attended the meeting of the American Breeders' Association, held January 28 to 30, at Washington, D. C. He reports a large attendance, and the best meeting which the American Breeders' Association has ever held. While in Washington he met a large number of our College friends and alumni. On Friday evening, January 31, he was an invited guest at the Seventh Annual Banquet and Reunion of K. S. A. C. Alumni. Some forty alumni, a few professors of earlier days, and others (wives of alumni) who have been adopted into the K. S. A. C. family, were present, and a very enjoyable evening is reported.

The number of matriculated students at the German universities during the summer term is given as 44,942, an increase of over 3000 on last year. Of these 6569 are in Berlin, 5734 at Munich, 4147 at Leipsic, 3275 at Bonn, 2350 at Freiburg, 2128 at Halle, 1025 at Gottingen, 1922 at Heidelberg, and 1362 at Jena, while the rest are distributed among various universities. There are 12,413 students of law; 10,752 are studying philosophy, philology or history, 6584 medicine, and 6212 mathematics or natural science. The number of students has nearly trebled during the last thirty years, the returns for 1876 showing that in that year the entries amounted only to 16,812.

Professor TenEyck, who returned on Thursday last from Washington, D. C., where he attended a meeting of the American Seed Breeders' Association, said to the local editor: "Washington is a splendid city, with its clean, paved streets and large, beautiful public buildings. The interior of many of these buildings is even more magnificent than the exterior. One who has passed through the Library of Congress can never forget the grandeur of its marbled architecture. The wonderful exhibits in the National Museum and Smithsonian Institute and the wonders of the United States Treasury building, Army and Navy building, National Printing building and others are well worth a trip across the continent to see."

During his several days stay in the Capital city professor Ten-Eyck took dinner at the homes of Mr. and Mrs. C. P. Hartley, Mr. and Mrs. H. C. Kyle, of Washington, and Mr. and Mrs. C. W. Melick, of College Park, Md. The professor visited most of the divisions of the United States Department of Agriculture, and found Kansas men in almost every division, all doing good work, too. A friend at the American Breeders' Association remarked that "Kansas will be running this whole Agricultural Department yet."

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### ***Alumni and Former Students.***

Henrietta Hofer, '02, and her mother have gone to New York City for the winter, where Miss Hofer is singing in the choir of Doctor McArthur's church, one of the finest churches of the city.—*Alumnus.*

L. M. Peairs, '05, has been elected to an assistantship in the entomological department of the Maryland Agricultural College, at College Park, Md. Mr. Peairs makes the fifth K. S. A. C. man in that institution.—*Alumnus.*

J. G. Haney, '99, Oswego, Kan., is the author of a sensible folder entitled "How to Grow 100 Bushels of Corn Per Acre." The essence of it is a discussion of the means by which two ears to the hill weighing one pound each may be secured. Mr. Haney has been making a reputation and winning prizes by reason of his own success with corn.

John M. Scott, '04, agriculturist in the Florida Experiment Station, is the author of press bulletins Nos. 64, 65, 70, 71, 74, and 79, issued by that Station upon "Rape for Hogs," "Rape for Dairy Cows," "Feeding the Dairy Herd," "Sweet Potatoes for Hogs," "The Dairy Rogue," and "Improvement of Cattle in Florida." These are short bulletins designed to advance the agriculture of Florida and should fulfill their purpose.

Late in November Minnie L. Copeland, '98, bade Chicago friends adieu and after a short visit at her Kansas home near Quenemo she continued her way westward. She writes from Tucson, Ariz., that she is in the employ of the Randolph Railway Company and is enjoying her work and the climate. She is rooming at the home of Prof. R. W. Clothier, '97, and Mrs. Clothier, and her address is Tucson, Ariz.

Minnie Reed, '86, science teacher, Kamehameha Manual Training School, Hawaii, favors us with a reprint of her study of "The Economic Seaweeds of Hawaii and Their Food Value." The thousand miles of coast line of the Hawaiian Islands give large opportunity for the collection of seaweeds, and the natives have long utilized them as important additions to their food. Miss Reed's investigation was made under the auspices of the Hawaii Agricultural Experiment Station, and the results are reported in a very interesting and useful manner.

*Board of Instruction (concluded).*

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SOIL TESTING.

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The Industrialist.

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TERMS AND VACATIONS.

FALL TERM, 1907, THIRTEEN WEEKS.

Thursday, Friday, and Saturday, November 28, 29, and 30.....	Thanksgiving vacation
Thursday and Friday, December 19, 20.....	Examination at close of term

WINTER TERM, 1908, TWELVE WEEKS.

Monday, January 6.....	Examination for admission, at nine A.M.
Tuesday, January 7.....	Winter term begins
Tuesday, January 7.....	Short courses in agriculture and dairying begin
Saturday, February 1.....	Annual intersociety oratorical contest
Saturday, February 15.....	Mid-term examination
Thursday, March 19.....	Annual concert
Thursday and Friday, March 26, 27.....	Examination at close of term

SPRING TERM, 1908, ELEVEN WEEKS.

Monday, March 30.....	Examination for admission, at nine A.M.
Tuesday, March 31.....	Spring term begins
Saturday, May 9.....	Mid-term examination
Tuesday, May 19.....	Beginning of summer course in domestic science
Tuesday and Wednesday, June 16, 17.....	Examination at close of year
June 14 to-18.....	Exercises of Commencement week
Thursday, June 18, at ten A.M.....	Commencement
June 19 to-September 16.....	Summer vacation

FALL TERM, 1908,

Wednesday, September 16.....	Examination for admission, at nine A.M.
Thursday, September 17.....	College year begins

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(Board of Instruction concluded on last page.)

THE INDUSTRIALIST.

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MANHATTAN, KAN., FEB. 15, 1908.

No. 19

The Uses and Limitations of Soil Analysis.

In the early history of Kansas no attention was paid to the composition of its soils except to boast of their inexhaustible fertility. The voice of the chemist has been lifted constantly, warning the people that this idea of possession of a fertility that is practically limitless is a delusion that can lead only to squandering of our natural resources, and to leaving posterity handicapped in the struggle for existence. To-day he is seeing his warnings justified. People in many localities of the eastern part of the State are making inquiry concerning chemical analysis of their soils with reference to learning what fertilizers should be applied and to what crops their soils are best adapted. A consideration of some of the aspects of this problem would seem to be timely.

The chemical composition of a soil is the most fundamental limit upon its usefulness. No matter what its depth, physical state or climatic environment, a soil that is actually deficient in one or more of the chemical elements essential to plant growth cannot be productive. Hence a thorough-going investigation of a soil cannot be made except it be on a chemical basis. However, the difficulties of a chemical investigation that shall lead to results that can be translated into definite statements concerning the special adaptation of a soil to a given crop, or into a prescription to meet its needs in the way of applications of fertilizers, are so great that at present they have been very incompletely surmounted.

All but a very small proportion of a soil is unavailable for the nutrition of plants and serves only for their mechanical support. The roots penetrate through to relatively great distances, both downward and sidewise, and thus the plant is anchored to a weight that enables it to stand upright. This mechanical function of a soil may be performed by material that is wholly inert in respect to nourishing the plant, or by material that to a certain extent is capable of undergoing changes whereby it becomes available. The nature of this more or less inert portion of the soil

is thus of the greatest importance in respect to the endurance of its fertility. It can be readily seen that, if a chemical analysis of the total matter of a soil be made, and it be found wanting, the soil is hopelessly poor. It is, however, only with soils that consist almost entirely of quartz sand that such results would be obtained. On the other hand, the presence in a soil of adequate amounts of all the chemical elements essential to plants is no proof that the soil is fertile, since these elements may be in forms of combination such that plants cannot get them. Chemists have therefore sought for special means of analysis that will enable them to ascertain what amounts of the several elements are available to plants, rather than the total quantities of those elements.

No chemical means have yet been discovered that will test soils as a plant does. One difficulty in the way is that the different kinds of plants differ greatly in their power to acquire nutriment from a given soil. If by prolonged research a mode of investigation should be devised by means of which quantitative results could be obtained that would be proportional to the yields given by a certain crop, under otherwise favorable conditions, the results would not be completely applicable to other crops. This adds greatly to the complexity of the problem.

The nutriment that a plant gets from the soil enters it dissolved in the soil water. It might at first sight seem that simply ascertaining what amounts of the substances in a soil are soluble in water would disclose its crop-sustaining power. This is not the case, however. In the first place, if water be kept in contact with a soil until there is reason to believe that it is saturated, and it then be removed, a fresh addition of water will dissolve more from the soil, and a third amount will dissolve yet another portion. The soil may be treated indefinitely with these successive portions of water and continue to yield material which goes into solution. In the second place, it seems undeniable that the roots of plants influence the extent to which soil particles in contact with them are dissolved, by means of substances which pass from them to the soil. In this way some crops are enabled to extract more nutriment from a given soil than others can. Again, the presence of decaying organic matter, humus, in the soil, by its production of carbonic acid, increases the solvent power of the soil water, an effect that extends over years of time. For these reasons analysis of a water solution of a soil will not teach us what capacity for nourishing plants the soil possesses.

As plants have some specific solvent effect upon soils, chemists have attempted to find a solvent that will imitate their action. In

this they have only partially succeeded. The use of a two-per-cent solution of citric acid suggested by Dyer has in many cases given consistent indications. In others the cultural experience has been at variance with what would be suggested by the analytical results. We have not thus far any solvent that will upon all soils give results that will be consistent with the yield returned by a single kind of crop, much less by all kinds, and it is not to be expected that such a solvent will ever be discovered. The conditions of absorption of plant-food by the living cells of the rootlets are different from those presented by an indifferent substance. This is indicated, not only by recent observations on osmosis, but more simply by the fact that different kinds of plants growing together in the same solution or soil take up quite different quantities of the nutritive salts. This so-called selective action must determine that each kind of plant is for itself an independent case for investigation in respect to its relations to soil fertility and soil analysis.

Whatever may ultimately be accomplished in devising means of imitating the action of plants upon soils the results so obtained will indicate the immediate capacity of the soil rather than its aggregate fertility. As previously stated, soils may have a part of the chemical elements in such stable and insoluble combination as to put it entirely outside the probably more or less remotely available plant-food supply. Aside from this nearly insoluble part we have another that dissolves in moderately strong hydrochloric acid. What will dissolve in a few days in hydrochloric acid will dissolve in weaker acids, such as are found in soils containing humus, if a few years or centuries be given, and the amounts progressively dissolved be removed by the roots of plants. The ultimate quantities of the elements of fertility that can be utilized by crops is thus taken to be practically those that may be brought into solution by hydrochloric acid of specific gravity about 1.12. A chemical analysis of such a solution may be of great value in determining the probable permanent durability of a soil, and to a less extent its immediate capacity.

It has been found that any virgin soil that shows an ample supply of nutritive substances soluble in acid as described will be fertile provided there are no greatly opposing influences in the physical condition of the soil or in the climate. With soils long under cultivation, however, by whatever means they may be analyzed results may be obtained that are more or less contradictory to cultural experience.

Soils may get into a condition of non-productivity, the causes of

which are obscure as yet. The influence of the previous cropping, whether different or the same, may greatly affect the yield of the present season. In some cases failures are traceable to fungus diseases with which the soil becomes affected. In other cases there is reason to believe that crops leave something in the soil that hinders the growth of succeeding crops of the same kind until it is removed. Some experiments by the bureau of soils have shown that in certain cases this condition seems to be corrected by the use of substances which do not themselves contain chemical elements of fertility. It is not impossible that a part of the beneficial effect of commercial fertilizers and barnyard manure is due to such action, though there can be no doubt that their effect is not limited to this, but that they supply needs of the crop in respect to chemical elements. The need of rotation of crops in order to maintain proper soil conditions is probably greater with many soils than is its need on account of any partial exhaustion of chemical elements.

The difficulty of drawing inferences concerning crop-producing power from chemical analyses only may be illustrated by referring to an experiment by Hilgard, in which a highly productive but heavy clay soil was mixed with one, three, four and five times its weight of purified sand. Plants were grown in a pot of the original soil, and in pots of soil of the four degrees of dilution by sand. It was found that up to and including the dilution with four times its weight of sand the plants made better growth in the diluted than in the original soil. Here, then, was an example of a soil-mixture with only one-fifth as much of the nutritive elements, and these in the same ratios to each other as in the original soil, that gave even better results than the undiluted soil. In short, chemical composition is very important, but it is only one of the important considerations in respect to productivity.

Not only is the physical state of the soil an important factor in determining crop yield; but its depth, and the depth, composition and general character of the subsoil are of the greatest significance. Further, in respect to sampling a soil for analysis, if this be not properly done, so that the sample analyzed actually represents the land under investigation, the results of the analysis are worthless as a basis for any general conclusion.

It will be seen from the foregoing that a chemical analysis of a single soil sample may mean very little, but to be of any service it must be considered in connection with many other things. To be of the most use it should be possible to compare it with the results of analyses of adjacent uncultivated soils and of other soils

in similar climatic environment. The physical conditions must also be carefully considered.

Partial analyses of soil directed toward answering definite limited questions are often very useful. Soils have been known to contain an abundance of nitrogen and yet to be deficient in that element in an available form. Organic matter may be so slightly decomposed as not to be in a condition to furnish nitrogen to crops, while the fully humified part can undergo nitrification promptly and thus supply this element, hence a distinction in the analysis between these two forms of nitrogenous matter may contribute much information. So, too, it has been found that phosphorus in humus is more available to the wheat crop than when in some other forms of combination.

So-called alkali soils are soils containing an excess of soluble mineral substances which do not in all cases give an alkaline reaction. An analysis of a soil with reference to excessive amounts of such mineral substances may be made a useful preliminary to any treatment to improve the condition. A qualitative analysis is certainly necessary, as the nature of alkali differs greatly and proper treatment of it cannot be prescribed without knowing the nature of the excessive salts present.

Some soils are deficient in lime, or, speaking more exactly, in calcium compounds, especially the calcium carbonate which is capable of neutralizing organic acids. A fertile soil for agricultural crops must be in a neutral or faintly alkaline condition. Analyses with reference to soil acidity are therefore often of much value. Independent of acidity leguminous crops, such as clover and alfalfa, require large amounts of calcium, and regions other than those in which limestone and gypsum are found may often require special investigation in respect to the calcium content of the soil.

The limitations upon the extent to which chemical analysis can be used in forming a judgment upon soils has lead to attempts to replace that mode of investigation by physical or mechanical analyses in which the size of the soil particles and in part the peculiarities of their mode of aggregation are studied. The relative dominance of certain sizes of particles in soils used largely for certain crops has been observed. However, the fact that the same crops may be quite successfully produced on soils of distinctly different mechanical composition makes this method of little practical use, however interesting a field of laboratory study it may be. The influence of rainfall, temperature, altitude, exposure and other climatic factors exceed physical constitution in their dominating position to a far greater degree than they do chemical composition.

A suitable physical state may accompany an almost sterile condition. The sizes of the rock particles of a soil that has been exhausted by cropping are not materially different from what they were when the same soil was in its virgin state of fertility. At best the results of a physical examination of a soil are useless unless they are accompanied by the results of a searching chemical examination.

No kind of laboratory investigation of the physical properties of a soil possesses more than a small fraction of the value of observations upon the soil in place, with no more complicated equipment than one's eyes and hands and an augur. The lay of the land, the depth and texture of the soil and the depth and character of the subsoil are points that immeasurably exceed in importance any other physical characteristics.

Both chemical and physical investigation of soils in a laboratory way being limited in the usefulness of their results, these must be supplemented or in many cases replaced by observations upon the natural growth of trees, shrubs, grasses or weeds upon the soil, and by experiments in the production of plants or crops upon it. Let organic nature answer the question, What is this soil good for?

Observations concerning the natural plant growth upon a soil have always been used by practical men in judging of its value. The rich lands supporting a forest growth of oak, hickory, and other hard woods, are in marked contrast with the poor, and even otherwise nearly barren, areas occupied by pines. The grasses of the rich prairies are very different in species and luxuriance from those of thin, alkaline, saline or otherwise unproductive regions. Even weeds seem to exercise a preference and sand-bur land is very different from that best adapted to "pusley." This means of gaining an insight into soil values is one that, while used from time immemorial, is worthy of more extended study and application.

Attempts to test soils as to their productiveness or their specific needs in the way of fertilizers have been made by means of experiments conducted in pots. The sizes of the pots used have varied from that of a capacity of a few ounces to one of several hundred pounds. Very valuable results have been obtained by this method, into the details of which space does not at present permit us to enter. It can readily be seen, however, that with climatic factors largely eliminated, and with a soil no longer in its natural state of aggregation or relation to subsoil, some of the most important features controlling crop yield are left out.

By far the best method yet devised for testing soils is by means of crops grown in the open field. Such experiments, in order to eliminate variations from season to season in rainfall and other climatic influences, should extend over a series of years to yield the best results attainable, but in a single year, if the season is not too abnormal, positive indications may be obtained. It is obvious that a soil may be deficient in but one or two of the essential chemical elements, and that in that case it would be a waste to purchase and apply fertilizers supplying elements not needed. Further, one may be disposed to apply to the soil an incomplete fertilizer, or an amendment that happens to be cheap or readily available, when in fact the soil is in need of something quite different. As a matter of economy, it is highly important that the farmer ascertain what is lacking in his soil before deciding upon the purchase of commercial fertilizers, or the kind to buy. The chemist cannot tell him with certainty what the soil needs, and no method has yet been devised that is equal to that of testing the land by means of crops that have been fractionally fertilized.

A test of this kind consists in laying off a series of plats on the soil in question, selecting an area as nearly uniform as possible, and applying different fertilizers to the several plats, leaving one or more unfertilized for comparison. The number of plats required depends upon the detail with which the test is to be made. Not less than four will suffice, and if this number is selected one plat will be left with no fertilizer, to one a potassium salt, to another a nitrogenous fertilizer, and to the other a phosphate must be applied. On comparing the crops obtained on the three fertilized plats with that given by the unfertilized one, the effect of potassium, nitrogen and phosphorus compounds separately applied will be ascertained. If it be found then that the nitrogen has increased the yield while the potassium and phosphorus have had but little if any effect, the conclusion must be that the soil is in need of nitrogen and not of the other two. If the plat receiving potassium shows an increased yield, a deficiency of that constituent of the soil will be indicated.

More comprehensive results are obtained by increasing the number of plats and including, in addition to those previously named, others to which nitrogen and potassium, nitrogen and phosphorus, phosphorus and potassium, and nitrogen, potassium, and phosphorus compounds respectively, are applied. In this case, too, it is well to add another plat, to be left without any fertilizer, making nine altogether. This arrangement will show

the results of each of the three fertilizing constituents and of possible combinations of them.

There is one serious drawback to an experiment of this kind. Plat experiments which are designed to be exact duplicates have frequently been found to give considerably diverse results. For example, if in the field to be tested a series of nine plats were to be laid off and no fertilizer applied to any of them, the yields obtained from the several plats would not be the same, in all probability. This source of error can be avoided in two ways. The first is by testing the land for a few years without fertilizers, ascertaining the relative yields of the plats in their natural state. This is probably the best method as preliminary to a thorough investigation, but does not yield immediate results. The other method is to multiply the series of plats as many times as practicable and take the average result of the corresponding plats. Thus, if the series were repeated three times, we would have the arrangement indicated by the accompanying diagram.

The average yield without fertilizers of the twenty-five plats will be shown by the average of plats 1, 9, 17, and 25, to which no fertilizer is applied, and the result will obviously be more reliable than if we should depend upon any one of these alone. Even if the total amount of land devoted to the experiment be no greater, these four plats represent the total area more truly than any four side by side do. So, too, the effect of a nitrogenous fertilizer alone will be shown with greater accuracy by taking the average yield of plates 2, 10, and 18, than would be the case by applying nitrogen to a single plat three times as large. The same considerations, of course, apply to all of the others, and the greater the number of repetitions of these series the more reliable the conclusions drawn from the results.

The interpretation of results obtained from such a series of plats is easy. Representing the entire series by the numbers of the first ones, it is obvious that if no material differences are noticed in the yields of the several plats, no fertilizers would be advantageous. If Nos. 2, 5, 6, and 8 showed increased yields not exhibited by any other plats, the necessary conclusion would be that the soil is in need of nitrogen, but not of anything else. If plats 2, 3, 6 and 7 showed increased yields, while plats 5 and 8 showed still greater increases, the conclusion would be that the soil is in need of both nitrogen and potassium, either of these alone producing a beneficial effect, but fertilizers containing both producing a still better result. If at the same time the plat receiving phosphorus only showed little or no effect, and phosphorus with nitrogen, or

with potassium, or with nitrogen and potassium, showed but little or no advantage over the plats receiving nitrogen alone, potassium alone, or nitrogen and potassium, respectively, it must be decided that phosphorus is not required by the soil. By similar lines of

A PLAT FOR EXPERIMENTAL FERTILIZING.

1. Nothing.
2. Nitrogen.
3. Potassium.
4. Phosphorus.
5. Nitrogen and potassium.
6. Nitrogen and phosphorus.
7. Potassium and phosphorus.
8. Nitrogen, potassium, and phosphorus.
9. Nothing.
10. Nitrogen.
11. Potassium.
12. Phosphorus.
13. Nitrogen and potassium.
14. Nitrogen and phosphorus.
15. Potassium and phosphorus.
16. Nitrogen, potassium, and phosphorus.
17. Nothing.
18. Nitrogen.
19. Potassium.
20. Phosphorus.
21. Nitrogen and potassium.
22. Nitrogen and phosphorus.
23. Potassium and phosphorus.
24. Nitrogen, potassium, and phosphorus.
25. Nothing.

reasoning, any possible results may be interpreted, but for the greatest accuracy in such experimentation it is necessary to perform the preliminary experiments referred to, in which the relative yields of the several plats are ascertained through a series of years without the application of any fertilizers, and giving the plats strictly uniform treatment.

While these precautions are necessary for the most concordant and satisfactory conclusions, results of value may be obtained by the four-plat test first described, and no farmer can afford to spend much money for commercial fertilizers without having ascertained, by one or another of the plans above described, the actual needs of the soil. In carrying out a fertilizer test of this kind the plats should be long and narrow, rather than square, and one-tenth of an acre and upward in area.

The practical fertilizing test may, of course, be extended to include other points such as would require applications of calcium (lime) compounds or organic matter. In many cases of soils that have become unproductive or gotten out of condition the deterioration may be traced to the diminution of the humus or organic matter in them. Before deciding that commercial fertilizers are necessary, the effect of green manuring should be ascertained. It should also never be forgotten in this connection that barnyard manure, because of its content of organic matter in a state of decay, is superior to chemical fertilizers containing equal amounts of potassium, phosphorus and nitrogen compounds.

The preceding considerations may be summarized briefly. A thorough chemical analysis of a soil is indispensable to any comprehensive study of its condition and probable durability. Such chemical analysis may not be sufficient alone to give positive indications concerning the present productiveness of the soil, or its needs in respect to fertilizers. Chemical investigation directed toward certain specific points may be of great value in respect to a given soil. Laboratory tests of a purely physical character afford little if any information that cannot be obtained better by examination of the soil in its natural condition and position. The immediate fertilizer requirements of a soil are best ascertained by means of systematic fractional fertilization of different crops.

J. T. WILLARD.

"Bird Life with Relation to the Farm" is the title of No. 5 of the Agricultural Education Series, to be issued next week by the Farmers' Institute Department. This will be mailed free to all the rural teachers of the State and to all members of the farmers institute, and to any others interested, on request.

"The Boys' and Girls' Industrialist" is now out and is being mailed to the teachers of the State, and to all farmers' institute officers. This contains full explanations, suggestions and directions relating to the boys' corn contest, and later a copy will be sent to every boy and girl who joins in the contests.

Local Notes.

The Horticultural Hall is enjoying a wagon load of new chairs. Saturday, February 22, George Washington's birthday, will be a holiday.

The winter mid-term examinations were held to-day (Saturday) and the members of the Faculty are busy over the quiz papers.

Supt. J. H. Miller, of the Farmers' Institute Department, spoke to the teachers of Marshall county at Frankfort on February 7 on "Agriculture in the Public Schools."

The *Students' Herald* is advocating a revival of the old-time cross-country runs. Two years ago we had five runs, and last year we had two. It was good exercise and lots of fun. Let's have some more.

Mr. H. W. Avery, '91, of Wakefield, Kan., will assist in a series of farmers' institutes starting at Clifton, Monday, February 17, and ending at Wamego, Saturday, February 29. Mr. Avery will talk on the "Farm Horse" at all of these meetings.

The Chemical Department has received a large shipment of apparatus imported from Germany, through the Kny-Scheerer Company. Most of it is general stock, but the order includes six analytical balances and a number of other special pieces of apparatus.

The Horticultural Department is making preparations for the early spring spraying of orchards and vineyards. The lime-sulphur wash is to be used. It is found that this spray has fungicidal value, as well as being the best wash for scale and other insect pests.

L. L. Shaw, a sophomore and a member of the College band and orchestra, has composed a very creditable piece of music. The composition is a march and has been arranged for the orchestra also. The College orchestra played it on Thursday morning, after the chapel exercises.

"Tree Culture," No. 4 of the Agricultural Education Series of the INDUSTRIALIST, issued by the Farmers' Institute Department, has been received from the printer and copies are now being mailed to all of the rural teachers of Kansas and to members of farmers' institutes.

Owing to the excellent weather, the contractors of the new buildings made considerable headway this week. Mr. Stingley is now laying the construction floor of the attic of the Domestic Science and Art Hall, and Mr. Bennett is well up in the second story with the stone work for the Veterinary Science Hall.

The College band, under the leadership of Prof. R. H. Brown, is hard at work preparing for the concerts to be given at Convention Hall in Salina and Lincoln, Kan., on the evenings of February 21 and 22, respectively. About thirty-five men have been selected out of the seventy-two to go to these places.

Professor Brink lectured before the Manhattan Domestic Science Club, February 6, on "Some of Shakespeare's Heroines." Mr. and Mrs. Beall sang a duet at the meeting, and Miss Latimer played a piano solo.

Sec. Lorena Clemons informs us that the enrolment for the year, that is for the fall and winter terms, inclusive of the summer course in Domestic Science, has reached a total of 2119 names. The spring term will undoubtedly add many new names to this figure. We expected it to be above the two thousand mark, but it is already way above anything predicted.

Mr. Chas. H. Sternberg, of Lawrence, Kan., student here in the early days of the College, who began collecting fossils under the guidance of Professor Mudge and by his constant work in that field since has succeeded in unearthing some of the most valuable specimens in the museums of the world, lectured to the geology class at the first hour Saturday on "The Life of a Fossil-Hunter." The lecture was much enjoyed, but unfortunately the time was too short to permit the delivery of the entire lecture.

The University of Kansas Glee Club, under the auspices of the College Young Womens' Christian Association, gave its program in the Auditorium, Tuesday evening. The rainy weather cut down the attendance greatly, but a good audience greeted the club and showed its appreciation of the performance by generous applause. The club individually and collectively acquitted themselves with credit and reflected honor upon our State University. The first part of the program was of a serious character, while the second part consisted largely of college and topical songs.

Professor Headlee and Assistant Peck are at Wichita, laying the plans and doing the preliminary work in a campaign that is being begun against the San José scale. The preliminary survey is to ascertain the location of orchards and plantings that are infested. It is intended to take vigorous measures to eradicate the insect. The possibility of loss by this insect is so great that all growers are expected to coöperate. Nothing is to be gained by concealing the fact that the scale is present. Wichita is the center of a section that is rapidly growing in importance in the production of orchard fruits and nursery stock, and the work is necessary for the future prosperity of these interests.

"Our Domestic Animals" is the title of a new book edited by Prof. Charles William Burkett, director of the Experiment Station of this College. The book is published by Ginn & Co., Boston, and is to some extent a translation of a French work that has had a phenomenal sale over there for several years. It is a large quarto volume of three hundred pages, well bound, and well gotten up. Its illustrations, many of which are colored half-tones, are simply beautiful. There is nothing finer in the average library. The book is written chiefly for young people. It treats of the subjects of dogs, cats, horses, sheep, goats, cattle, pigeons, poultry, birds, etc., all of which are described in a manner that is sure to

interest young readers. While it does not pretend to be a scientific work, it is accurate in its statements throughout and will serve well its purpose—that is, to prepare the reader for a more scientific study of the subjects named.

The Farmers' Institute Department is mailing a special edition of the INDUSTRIALIST containing the regulations for the "Kansas Boys' and Girls' Contest for 1908." The general contest this year will be limited to boys between the ages of ten and twenty. Each boy who enters the contest must agree to cultivate well and exhibit ten ears of corn either from the quart of corn or from the ten ears. He must also agree to attend, if at all possible, at least one session of the county institute. All winners in the county contests in class A, that is, in the class formed by the boys who are over fourteen years old, will be eligible to enter the State contest to be held at the Kansas State Agricultural College, December 28 and 29, 1908. At this institute there will be a grand corn-judging contest, with prizes. There will also be a Durum wheat contest, a sugar-beet contest, a garden contest in which girls may take part, a potato-growing contest, a flower-garden contest, and lastly a domestic science and art contest for the girls. The copy of the INDUSTRIALIST containing the rules for these contests, together with other necessary documents, may be obtained free of the Farmers' Institute Department of this College, and boys and girls who wish to become contestants for a trip to Manhattan, or a prize, should send for it at once.

Alumni and Former Students.

Geo. O. Greene, '00, stopped between trains Friday to pay respects to his alma mater. He reports business good at Plainville where he is in the mercantile business.

We regret to have to record that in the death of Ross Long, '99, tuberculosis has claimed a third victim from the same family. Mr. Long died in Denver, Colo., on the 12th instant. The body was brought to Manhattan for burial.

S. C. Mason, '90, writes from Palm Springs, Cal., of interesting work for the Bureau of Plant Industry. He is in charge of investigation in dry-land agriculture, particularly in regard to the introduction of the date and fig in sections adapted to their growth.

Changes of address: Elenore Perkins, '00, 1732 Monterey Road, South Pasadena, Cal.; E. A. Morgan, '07, Whitewater, Kan.; W. G. Shelley, '07, Akron, Colo.; R. A. Carle, '05, care of Room 1509, Continental Trust Building, Baltimore, Md.; H. F. and Florence (Vail) Butterfield, '01, 703 W. Third street, Pittsburg, Kan.

John W. Shartel, '84, of Oklahoma City, Okla., seized an interval in a business trip to Kansas City to visit his son, who is attending College, and to note the many changes in the institution that have taken place since he was last here. Mr. Shartel is not only a busy lawyer, but is largely interested in an electric traction company and real estate improvement enterprises.

Board of Instruction (concluded).

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G. A. Porteous	Herdsman
Wm. A. Lamb	Poultryman
Floyd Howard	Farm Foreman
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